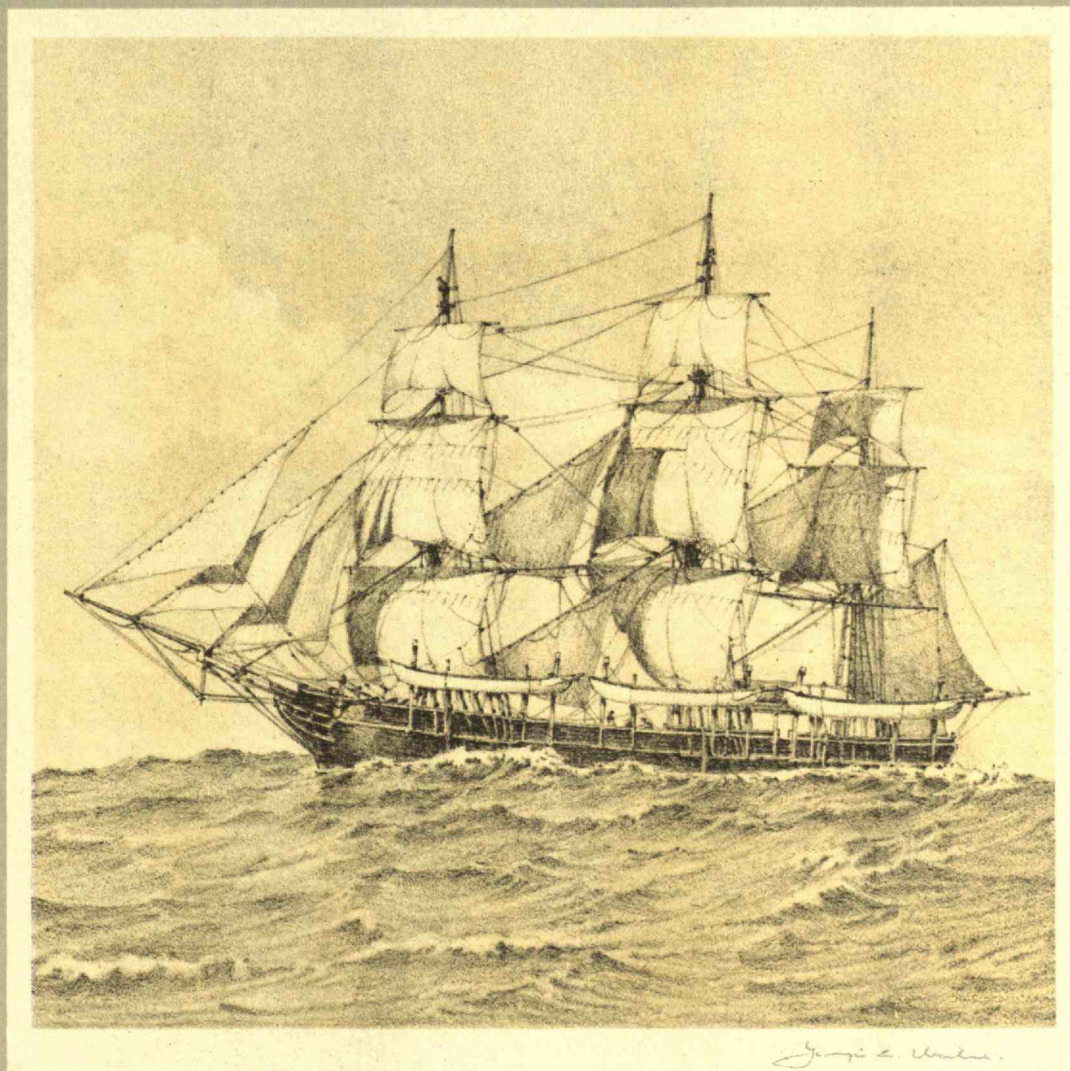


THE TECHNOLOGY REVIEW



RELATING TO THE MASSACHUSETTS
INSTITUTE OF TECHNOLOGY
DECEMBER • • • 1928

technology review

Published by MIT

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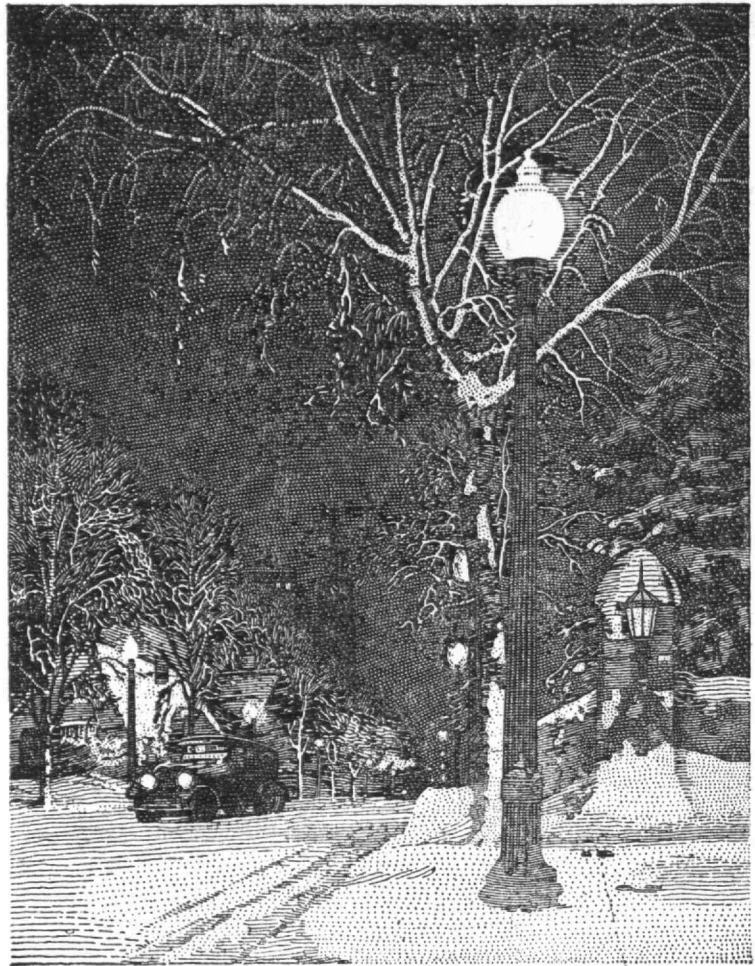
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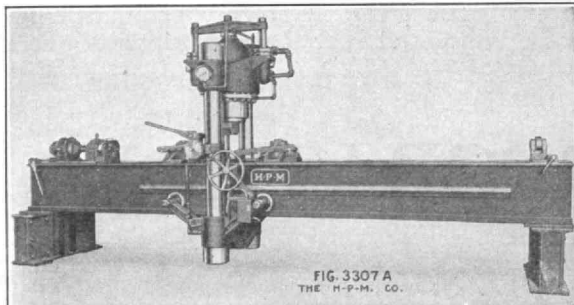
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The Hydraulic Press Mfg. Co.

The TECHNOLOGY REVIEW

Relating to the Massachusetts Institute of Technology

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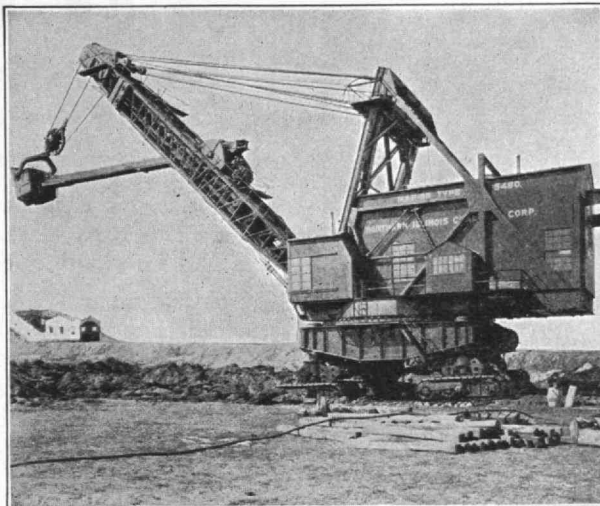
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THE TABULAR VIEW

AS WE gather together for identification the contributors to the December Review, we see one newcomer and four whose names are already familiar to our readers. **CL** HAVEN EMERSON has practiced medicine, and served as President of the Board of Health and Commissioner of the Department of Health in the City of New York. In the war he was a Colonel in the Medical Corps, was made an Officer in the Legion of Honor, and received from this government the Distinguished Service Medal. Since 1922 he has been Professor of Public Health Administration in Columbia University. **CL** EDWIN B. WILSON was the author of that much-discussed article in The Review for last April, "The Use and Abuse of Statistics." Now the Professor of Vital Statistics in the Harvard School of Public Health, he is thoroughly qualified by experience to discuss the relationship between the sciences of physics and medicine, having served for five years as the Head of the Department of Physics at Technology. At the conference for teachers of college physics held at the Institute last summer under the auspices of the Society for the Promotion of Engineering Education, Dr. Wilson gave an address on the subject of this article. **CL** H. E. LOBDELL, '17, is the Assistant Dean of Students at the Institute and Editor of the The Review. This is the fiftieth issue of the magazine since Professor Lobdell assumed the Editorship in 1922. He contributes to every issue, but it is only in those reviews of books signed "H. E. L." that it has heretofore been possible for the reader to identify his work. **CL** HARRY J. CARLSON, '92, is a member of the Technology Corporation and an architect practicing in Boston. He contributes reviews of books to The Review from time to time. **CL** HENRY B. KANE, '24, is known to every reader by his drawings that have been appearing in The Review during the past year.

A YEAR ago in November, The Review Editors began, on the covers of the magazine, the reproduction of a series of etchings, aquatints, and lithographs done by Technology men. The one chosen as the first of the series was the etching "W. I. Trade" by GEORGE C. WALES, '89, and nothing now gives The Editors more pleasure than to be able to present on this month's cover a lithograph by Mr. Wales entitled "Desdemona — New Bedford." Like most of his subjects the *Desdemona* was (and perhaps is) an actual ship; and followers of the sea say that even if she had never existed and the ship were to be built like the picture, she would ride as gracefully as Mr. Wales has made her ride here. **CL** The Editors are indebted to the Gallery of Charles E. Goodspeed and Company for the loan of the lithograph.

THE month of November is only a little more than half gone as this is being written, but already the November issue is out of print, in spite of the fact that the "print order" was the largest in the history of the magazine. Copies can now be obtained only from the dealers listed in the Table of Contents. The announce-

(Concluded on page 78)

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THE TABULAR VIEW

(Continued from page 77)

ment of the Gaw single sleeve-valve automobile engine which was picked up in advance by the press associations attracted nation-wide attention and resulted in requests for more copies than could be supplied. Other features likewise attracted attention, particularly the article by Dr. DONALD C. STOCKBARGER, '19, on ultraviolet therapy, and the story of science in the Union of Socialist Soviet Republics (Russia) by NIKOLAI BORODIN. Several of these items were quoted and summarized in newspapers, many of which were located far from the precincts of Boston and Cambridge, Mass. All this in turn swelled the demand.

THE difficulties with terminology in the sciences have always been a source of worry to editors, and from a letter that has reached us from one of our readers, a consulting electrical engineer in Boston, it appears that the question is a puzzling one for him. He refers to the article "Check the Sunbath" in our November issue:

In your last issue I noticed the use of the word "spectrogram" and simultaneously in a statement from my dentist use was made of the word "radiogram," the latter in substitution of the word "radiograph" used several years ago.

I assume that scientific good usage has decided on this form of word meaning pictures taken by certain processes, but in the case of the "radiogram" has good usage determined what change, if any, should be made in the same word meaning a message sent by radio, which is, of course, an entirely different thing?

All we can say is that we wish there were such a thing as "scientific good usage." The use of "spectrogram" to stand for the instrument which makes a "spectrogram" is in entire accord with best usage among the men who work with such things (spectrographers?), although Webster's dictionary permits the use of "spectrograph" to mean either the instrument or its product. As for "radiogram" we suggest that it is possible to explain the discrepancy between the two uses of the word by observing that perhaps "radiogram," the radio message, is only a form of "radio-telegram" corrupted for advertising purposes by one of the companies in the business. Frankly, we don't know. ¶ Coined words usually work out without difficulty when their use is restricted to those publications which deal exclusively with one particular science, but they may cause trouble for a magazine which is privileged to discuss every conceivable kind of science. A magazine which circulates exclusively among workers with x-rays and which takes all its material from that field need almost never worry about a misunderstanding in the use of "radiogram," for example; but a general magazine like The Review might easily find it desirable to use both meanings of the word on the same page. ¶ The Engineering Standards Committee is now working on a list of standardized mathematical symbols; perhaps they will be able to do something for scientific words. The Review Editors invite further comment.



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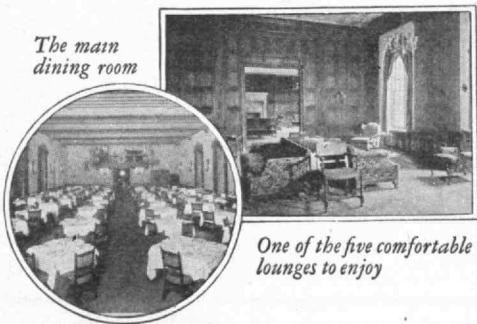
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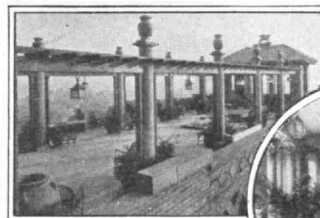
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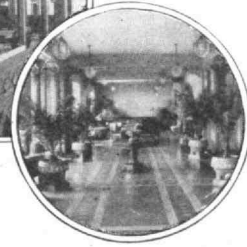


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again. There was trouble to spare that night—everyone knew where to find it, and went out to get their share. Swearing? Sure—Mad? Clean through—who but a moron or fool giggles at a blizzard—but happy? Every last one of them, and fighting with all they had."

—A Manager's Report

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The TECHNOLOGY REVIEW

VOLUME 31

DECEMBER, 1928

NUMBER 2

WHY AN INFIRMARY?

A foremost exponent of public health answers

BY HAVEN EMERSON

INFIRMARIES are the tokens of a continuing faith in the virtue of the earliest of sciences for, as Sydenham said, "There never has been a time when it was not." In infirmaries there is practised the everlasting art of medicine which, as Hippocrates told us, consists of three things: "the disease, the patient, and the physician. The physician is the servant of the art. The patient must combat the disease along with the physician." So in infirmaries there must be the spirit which compelled Ambroise Paré to close many of his case histories with the note, "I dressed his wounds but the good Lord healed him."

Technology has reason for her great pride in having opened the Richard M. Homberg Memorial Infirmary. It is a most important step in forwarding her program for the care of student health. While the road is long and steep and rough the goal seen clearly by the spirit of Sedgwick, which still glows abundantly in her halls, must include that concept of healing which implies maintenance and reestablishment of normal conditions of existence.

It is well to remind ourselves of the point of view of Allbutt that "diseases are not even species such as cats and toads, but the abnormal, though not altogether irregular behavior of animals and plants, to be considered as isolated disturbances of a healthy body, not as the phases of certain periods of bodily development." Always there must be in the minds of those in charge that aphorism of Jacobi, "Treat the man who is sick, not a Greek name," a point of view

perennially forgotten, and as often reaffirmed. It is eternally essential for the proper conduct of an infirmary.

BUT is the care of the sick to be the only, if the main, gift which an infirmary and its attendant geniuses bring to an institution of learning? Do we not see widely throughout this country the hospital as an expression of a new ambition, as a center for protection and information, as one link in what has been dubbed the chain store system for communal health?

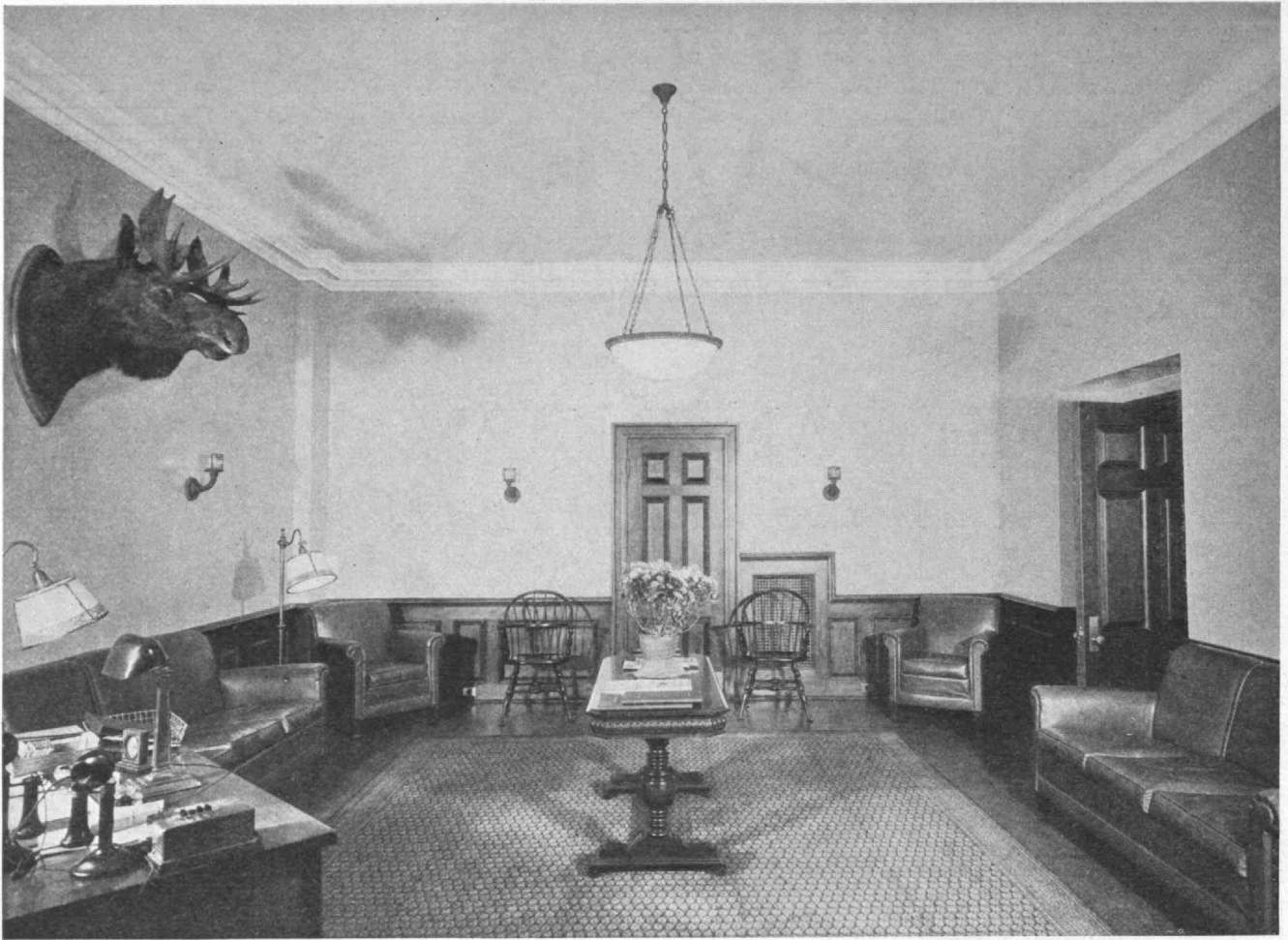
An infirmary is destined to act as temporary host to a procession of the weak, unsound, frail, irresolute, faulty in mind and body, to the feeble, to those with defects; in substance those with infirmities, victims mostly of the five chief causes of ill health — ignorance, tradition, superstition, indifference, and prejudice. With all our gains in security of life, and the greater breadth and length of life, which have been won through the first eras of public health, by authority, sanitation, control of environment, direction of public services and widespread efforts at general information and protection against the hazards of aggregate and

industrial existence, there remains an almost unbelievable mass of inertia so far as personal participation is concerned.

This is vividly brought out by Dr. Thomas A. Story in his comprehensive report for the Committee of Fifty on Hygiene Programs in Institutions of Higher Education in the United States last year. He says, "Six per cent of



ENTRANCE TO THE NEW RICHARD M. HOMBERG
MEMORIAL INFIRMARY AT THE INSTITUTE



RECEPTION ROOM OF THE NEW INFIRMARY. FOR FURTHER DETAILS SEE PAGE 98

our population can neither read nor write and have behind them an unbroken ancestry whose folklore and mores unite them with the magicians, priests, and medicine men of prehistoric education. Some 15,000,000 of our people cannot read intelligently or write intelligibly and the great majority of the public avoids the hard work of thinking when problems of health present themselves."

In an infirmary such as the Homberg you have the daily experience of the extent to which the very flower of our people, the elect of the nation, the favored youth of this generation, lack either by experience or training acquaintance with old and well-established laws of right living. No university infirmary can escape a manifest destiny as a center of the study and prevention of disease, as the focal point through which all the power of collegiate departments of the sciences converge to illuminate the reasons for individual ill health.

HOWEVER, let us review some of the practicable uses which an infirmary such as the Homberg is likely to serve in addition to the diagnosis and treatment of the sick. From about 1900 there began to appear in our American colleges the provision of medical services for prevention as well as for treatment of disease, the impulse commonly arising from an experience with epidemic disease upon the campus. From a part-time advisory service conducted by a physician in a gymnasium office where a few of the students sought answers to health

questions, first aid for injuries, and occasionally a diagnosis of acute pain or fever, there developed the convenience of a physical examination for new students, the exclusion of the unfit from athletic competitions, the detection of defects, threatening life or future usefulness, or a hazard to college mates.

Then came facilities for correction of defects by exercise, surgery or medical treatment, out of which has grown as constructive a type of protective and developmental care as could be wished for. We see some such structure as the following, either in action or being, closely approached.

The health director of the college community, is in charge of a technical staff corresponding in administrative relationship to a separate institute, not a department, and responsible directly to the President on a par with the deans of the various schools or colleges. From this strategic position the health guidance, sanitary policies and sickness care of students can be operated with the maximum of convenience.

The specific services will be found to include:

1. The annual health examination, preferably of the entire teaching and student body. Ample time, great thoroughness, careful interpretation, advice offered, subsequent conferences to learn if action has been taken. Here begins the teaching of a healthy way of life by a tutorial system built on personal inquiry. The chief value of this service is to:

- a. Form the habit of an annual medical examination
- b. Set standards for competent medical service
- c. Give specific personal health instruction and, without exaggeration, warn of results of neglect of defects or errors in hygiene

d. Give incentive for direct personal action

e. Give opportunity to develop the confidential relation upon which help in emotional and conduct problems depends

f. Teach the significance of a completed medical history

2. Special examinations for those wishing to participate in athletic competition or other extra-curricular activities.

3. Out patient services, clinic and room calls, Individual health education individually applicable. More accessible to information when sick than when well.

4. Immunizations. Smallpox, diphtheria, typhoid. Vaccinate unless they object. Must show initiative not to be vaccinated rather than to be vaccinated.

5. Control of communicable diseases.

6. Mental hygiene helps in scholastic, disciplinary, social, emotional and conduct problems.

7. Nutritional guidance. Twenty to thirty per cent of American students have not yet learned to balance income and expenditure, to keep their body bank within ten per cent of balancing. Few experiences are so educational as the guided observation of one's own combustion performance and the effect of even slight variations of meals, play, worry and work upon the draft, ashes, storage or waste of body energy. This is most necessary.

8. Bed care of the sick for observation, for prevention, for rest, for convalescence as well as for therapy.

9. Sanitary supervision of dormitories, lodgings, class rooms and laboratories, pools, gymnasiums, and other parts of the plant. Food handler examinations.

10. Dental service as an experience in community and cooperative economy. Salaried dentist and work performed at cost.

11. Eye refractions for check upon correction of visual defects. Also for community economy.

12. Laboratory and x-ray facilities provided as accessory to out patient department and bed cases.

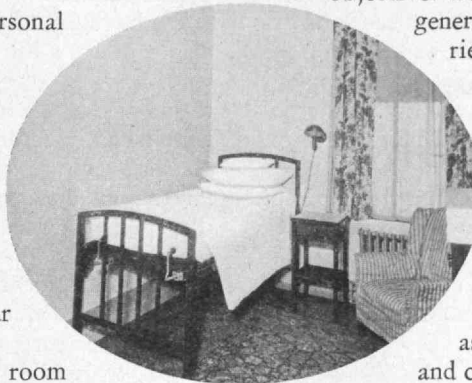
13. Pharmacy and physiotherapy demonstrating economies made possible by the non-commercial control of therapeutic aids.

NO ONE can review the activities of a student health service such as may be expected to develop out of a college health center or infirmary building without being struck with the change in approach to the educational objective. Formerly health education dealt with general principles, natural laws, usual experience, and common practices. Information was given in didactic doses to large groups assembled under compulsion and believing themselves to be the happy possessors of perfect health and thereby made immune to new ideas relative to their way of life. This method has made little progress with the conduct of college graduates who exhibit quite as wide a range of hygienic vagaries and crimes as their less educated fellow citizens in less cultured communities.

The plan of today, whether *in* college or *out*, depends for its value on enlistment of the interest of the individual. The seed of health education is sowed in the nature study courses in grammar schools where the child is fascinated by a glimpse into the story of life and learns the lesson of experiment and observation for the answer of questions. The flower and fruit is in that relationship with the physician which avails of his diagnosis and teaching of health.

There seem to be as many ways of attaining and retaining health as there are varieties of sickness and, as Celsus said, "in medicine rules may be absolute but consequences are variable." And as Delafield taught, "the words *always* and *never* cannot be used in describing the natural history of disease."

We see the conquests of the first great era, that of



ONE OF THE GENERAL WARDS, WELL EQUIPPED, AIRY, CHEERFUL. IN THE OVAL: A PRIVATE WARD

sanitation, consolidated, accepted, applied and become an integral part of our present standard of living. We still reverberate with the waves of the second era, the waves of fanatical and emotional appeal to save the world's health through the prevention of a statistically prevalent cause of death. We thrill with a sense of national pride in the descent towards the base line of the downward trending tuberculosis death rate, and hang our racial head when viewing with alarm the high maternal mortality and the rising death toll from heart diseases, diabetes, and cancer.

The third era of preventive medicine, the threshold of which we now approach, promises to fulfill more nearly than its predecessors the ambition set for us by Sir George Newman: "To build a better tabernacle for the soul of man to inhabit." This is a personal undertaking to be made *by* the man and not *for* him.

THE DEDICATION of the Homberg Infirmary will consist not in words spoken at the ceremonies of its formal opening nor in the structure of this mansion of Hygeia, but in the translation into human lives of the knowledge which will pass from the physician to the patient in sickness and in health to the end of time.

As Technology Alumni launch themselves upon the sea of opportunity, fully equipped with the power to serve others, they will carry with them the memory, the example, the tradition of a type of guardianship which they will insist upon for their own family and com-

munity. They will have learned to depend upon and demand that physical equipment which is the necessary background and convenience for the technicians, the philosophers and artists of modern medicine, surgery, and public health.

We have passed the time when even the ablest physician can lead a life of wholly independent endeavor, and we have emerged from the period in public health when the saving of life in the statistical mass satisfies. Here is the answer, whether in college or county, village or city district, army or industry: the organization of the many for the guidance of the one, focusing all resources to illuminate the assets and liabilities of the person and the personality.

It will be for the future to teach us whether the patient will exhibit the will to be well, the imagination of improvement, the hope of health upon which the entire project depends. Acquisition of health is a matter of character, — the conquest of inertia by desire, of ignorance by information, of superstition by incredulity and by exercise of the critical faculties, of tradition by open-mindedness.

No health beyond the passive state of the well-fed domestic cow will prevail among us until we burn, each with an eagerness to become good stewards of this life we hold in temporary trusteeship, to achieve all of the happiness our inheritance permits to us, and to count it humiliation to be ignorant of anything that bears upon the quality and quantity of our days





VALLEY OF THE TEN PEAKS NEAR LAKE LOUISE

GRAVEL AND GUMBO

Facts, figures, and incidents of a transcontinental drive

BY H. E. LOBDELL, '17

BY railroad two people can go from Boston to Portland, Ore., and return on a summer tourist ticket for about \$400, including their Pullman fares. They can do the same by automobile for less money and see more of the country but it will take them longer and require more patience. Last summer it cost me to do it \$300.25 for car operation but this figure includes the cost of driving 2,000 miles in the Pacific Coast States in addition to the round-trip transcontinental journey. Also returning a roundabout way through the Canadian Rockies added an extra 700 or so. My total mileage was 10,271 and much of it was through mountainous territory.

Some people delight to climb mountains afoot while others boast of their pleasure in ascending a horse. Each mode of procedure has points in its favor, but I definitely discarded the former some time ago and, although restricting my range of accomplishment, thereby retained sufficient wind to enjoy the scenery. Last summer by temporarily shelving the equestrian method to try the flying-bridge of a motor car I discovered what I believe to be the best way of all.

Five years ago two of us essayed and successfully terminated a journey by automobile from Boston to Denver which involved a day and a half spent wallowing in the sea of mud which at that time constituted the

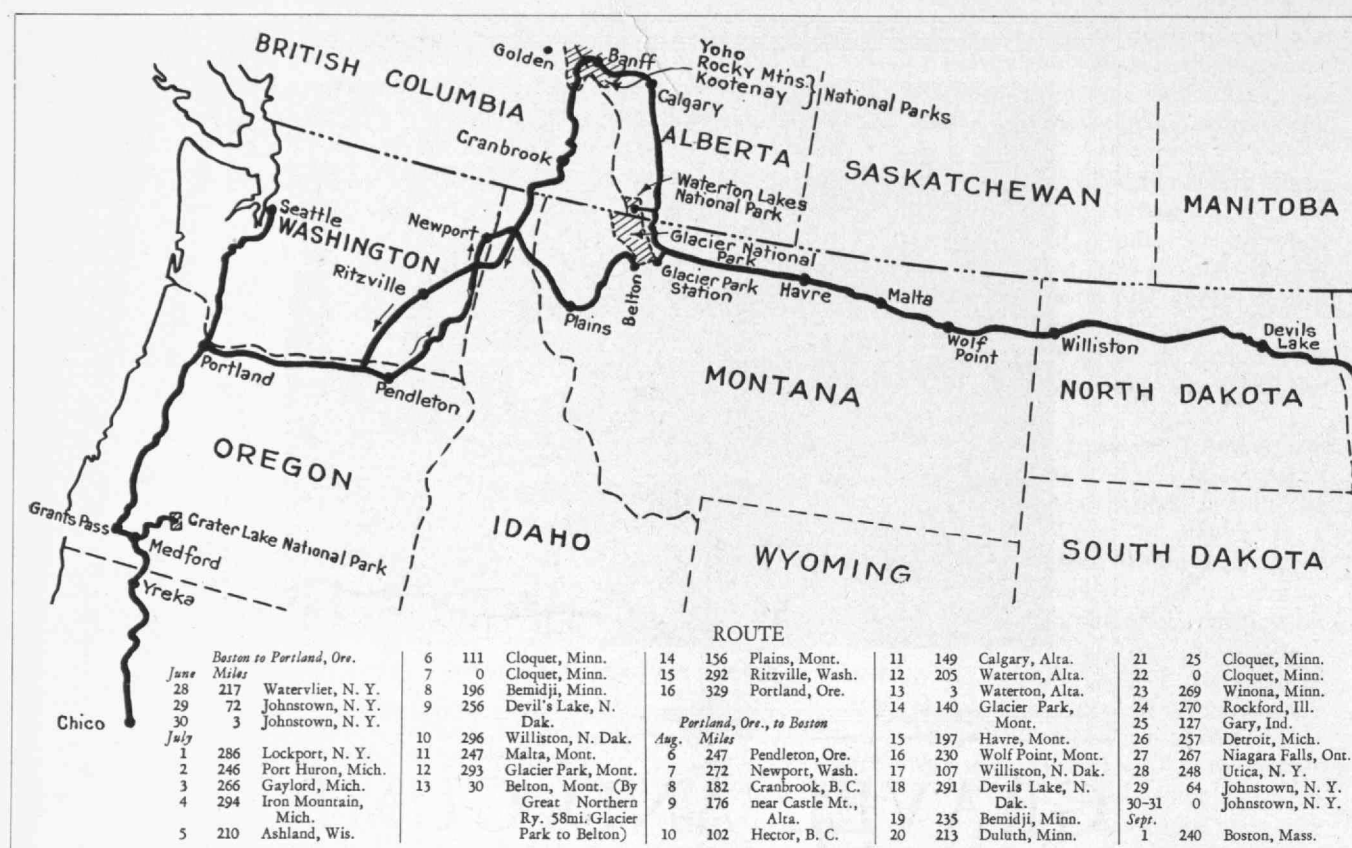
alleged turnpike between St. Louis and Kansas City. The State of Missouri has since laid a concrete highway between these points and this known fact made stories of other roadbuilding progress west of the Mississippi sound quite plausible. So it appeared to be feasible to plan to spend several midsummer weeks of 1928 prowling about portions of the northern American and southern Canadian Rockies which hitherto had been traversed by dint of hard, physical labor on my part, or more often on that of my horse.



Since the only economical way to get a motor car from Boston to the mountains was to drive it there, the project blossomed into a transcontinental journey with its special objective a particular area in southwestern Alberta. This was the Canadian Waterton Lakes National Park, adjoining the northern boundary of the United States Glacier National Park. Previous to

the late summer of 1927 when the Prince of Wales Hotel opened and a good motor road leading to it from Glacier Park station on the Great Northern Railway became available, the only way to explore the Waterton reservation was to make use of the picturesque but somewhat cumbersome pack train method.

Countless motorists have driven from coast to coast since the Glidden tour pioneers but most of these veterans



seemingly are able to muster few helpful pointers for a tenderfoot beyond wishing him luck and telling him he will probably get some tough roads but ought to get through. It may be "kinda rough in spots," they will say, or "you may get held up a couple days by rain." Some belong to the ultra-optimistic group. These congenital though cheerful liars readily unleash their large imaginations, glibly reiterating the good-roads-all-the-way myth. And it is a myth! But as for giving an idea of

the mileage per day which one can expect to make, or the chances of fairly good hotel accommodations, or warnings of special equipment to carry, or pitfalls to avoid, most of them are altogether indefinite. All seem in accord on one point: it is a great experience to look back upon.

However inexact and meagre the advice and data, the author and his mother left Boston on June 28 last, headed for Portland, Ore., along a route planned with aid of the official highway map of the American Automobile Association. We reached there July 16, drove in the Pacific Coast States as far as from Bangor, Maine, to Miami, Fla., headed east August 6 and arrived back in Boston September 1. We found it as great an experience to undergo as it is to look back upon.

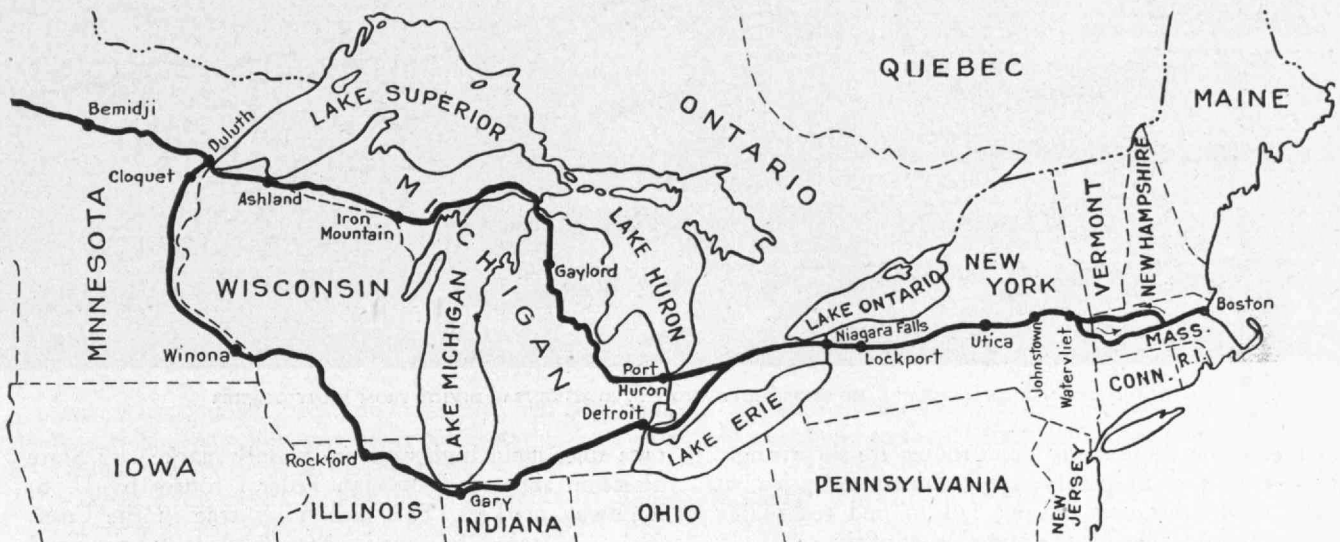
Better than 250 miles per day can be covered without discomfort while on the road. Our daily average, deducting eleven days on which we did no driving and nine other days during which we accumulated in all less than 150 miles, was nearly 220. This was in spite of all sorts and kinds of road conditions and weather with one person doing all the driving and that



SOUTHWARD ACROSS THE INTERNATIONAL BOUNDARY FROM THE FOYER OF THE PRINCE OF WALES HOTEL

ANALYSIS OF COST

	Miles	Cost	Per Mile	Gals. Gasoline	Mi./Gal.
Boston, Mass., to Portland, Ore.....	3800	\$107.94	2.84c	268	14.1
On Pacific Coast.....	1955	72.87	3.72c	149	13.1
Portland to Boston.....	4516	119.44	2.64c	292	15.1
TOTAL.....	10271	\$300.25	2.92c	709	14.4



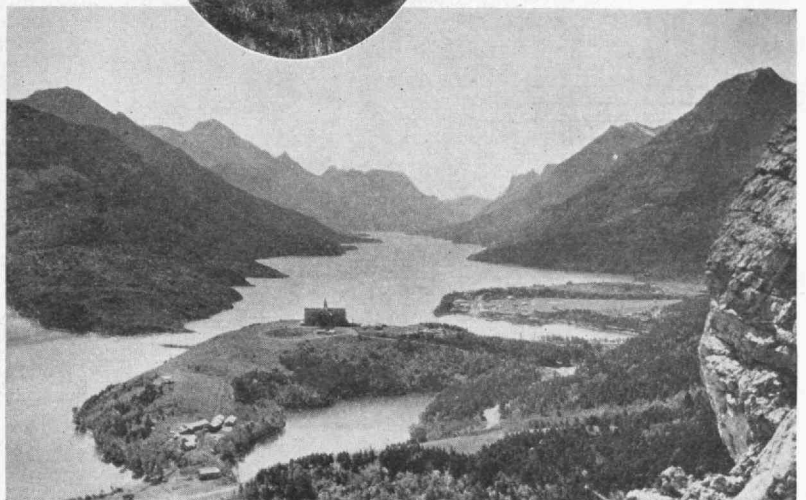
person in no particular hurry. Going westward along the most northerly transcontinental route (shown by the map), the 3,800 miles from Boston to Portland were covered in fourteen full days and two half days of driving. The detailed itinerary and table showing distances for the west- and east-bound journeys are shown in the chart which accompanies the map.

It was a trip of extremes. Not only did the route pass through fourteen states, three Canadian provinces, and five National Parks and vary from sea level to over 7,000 feet above sea level on the rim of Crater Lake in southern Oregon, but the weather ranged from a near-cloudburst in Minnesota and a prairie fog in North Dakota to a twenty-eight day period west of the Continental Divide without a drop of rain and in temperature from 105 in the shade in the Sacramento Valley to that requiring steam heat at Calgary. There were other contrasts: cursing traffic officers in Detroit and the politest of Police Departments in the thriving city of Havre, Mont., where the mayor tags out-of-state cars and tells their operators to forget local parking regulations; 4,429 miles in thirty-three days without an instance of tire trouble and then three punctures in one day (in Montana); gasoline at forty cents for the Imperial gallon, or about thirty-three and a third cents a U. S. gallon, in British Columbia as opposed to seventeen cents a gallon in Chicago; hotels such as those operated by the Canadian Pacific at Banff and Lake Louise or the Prince of Wales and Glacier Park hotels operated by the Great Northern as compared

with certain other hostleries to which justice cannot be attempted in print. But no one need shun a transcontinental auto trip on account of fear of hotel accommodations.



LEFT: VIMY RIDGE FROM THE PRINCE OF WALES HOTEL. BELOW: WATERTON LAKE AND IN THE DISTANCE THE UNITED STATES GLACIER NATIONAL PARK





IN GLACIER NATIONAL PARK: LAKE MCDERMOTT AND THE CONTINENTAL DIVIDE FROM MANY GLACIER

On the whole those along main routes are surprisingly good. They vary in quality, appointments and price but only in two instances did we fail to find reasonably comfortable quarters for the night. West of the Central Time Belt the price of a room and bath (and they have them) is customarily \$2.00.

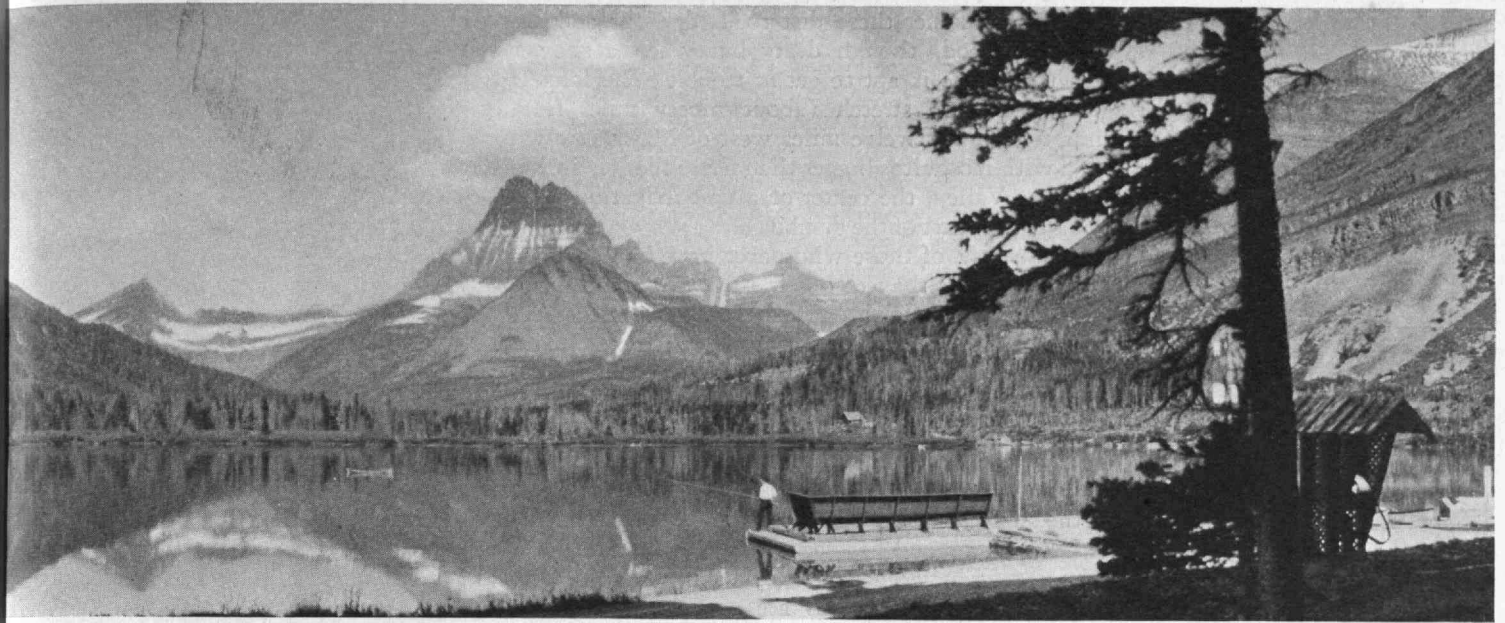
Roads are the chief hazard. To the Mississippi they are paved for the most part and the unpaved portions are usually good wide gravel. Concrete stretches are open for many miles through New York, Ontario, Michigan, Indiana, Illinois, Minnesota, and in the Pacific Coast States. Much widening by the "three-strip" process is being accomplished. In the United States and Canadian National Parks the main routes are good gravel, some are oiled and many are being reconstructed to eliminate blind turns and sharp grades. In the northern states east of the North Dakota-Mon-

tana line, main highways are plainly marked by State direction signs and through Federal routes by U. S. Highway markers. This also holds true in the Coast States. In Canada there are usually provincial markers which are easily followed.



Between Minnesota and the Rockies are the roads which cause delay in case of wet weather. North Dakota is somewhat more advanced than Montana since her roads are posted, while in Montana one is often compelled to rely on dead reckoning and a general sense of direction. If on a through route, such as the Theodore Roosevelt Highway (U. S. 2 from Sault Ste. Marie, Mich., to Bonners Ferry, Idaho) it is practicable to take frequent bearings on the main line of the Great Northern Railway which it follows. Most other through routes follow trans-continental railways. At present this Roosevelt High-





way is incomplete over the mountains and it is necessary to ship autos from Glacier Park station to Belton by rail, a distance of fifty-eight miles.

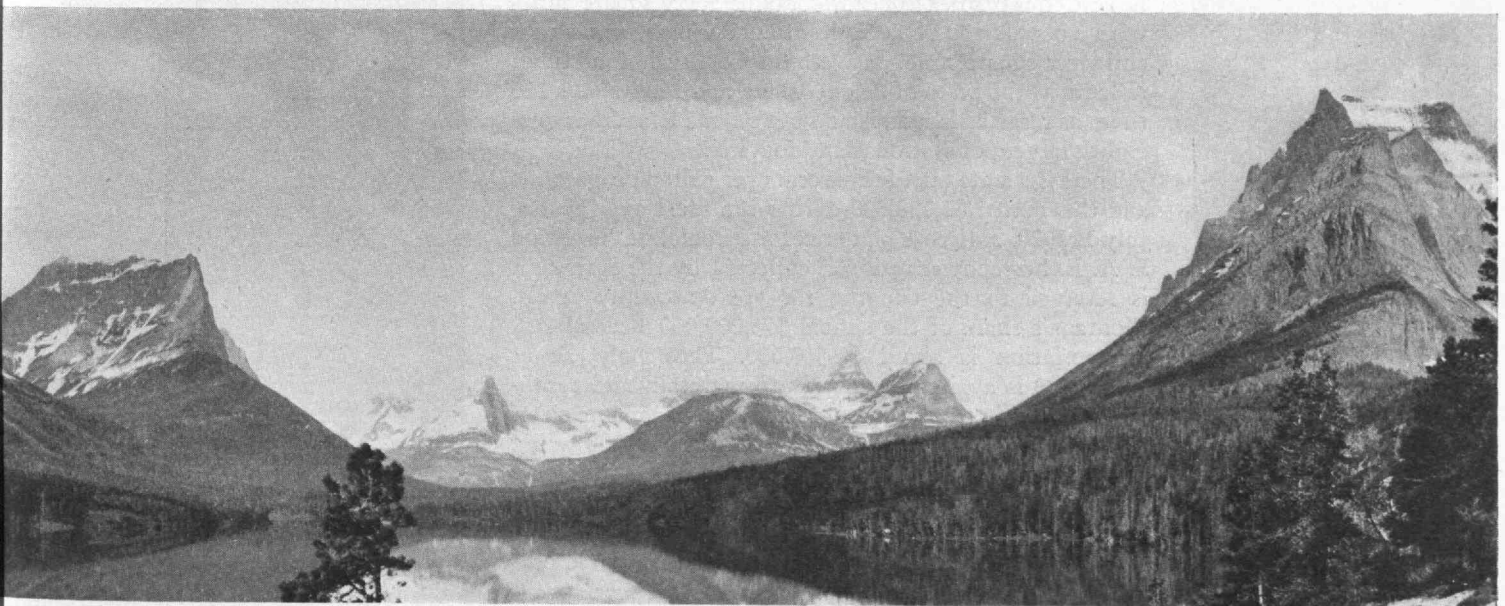
By 1931 it is expected that the transmountain link over Logan Pass in Glacier National Park will be opened. While it will not be the highest road summit over the Rockies (Milner Pass road traverses the Colorado Rockies at 11,797 feet and Sherman Hill Summit on the Lincoln Highway attains 8,835 feet), the Logan Pass road will reach 7,000 feet. What is more important than mere altitude is that it will make accessible by motor the most prized scenery of the Park and that its grades are said to be planned so as not to exceed seven per cent. The building of this road is indicative of the improvement the automobilist may expect a few years hence. By the time it is opened much further work will also have been done on other

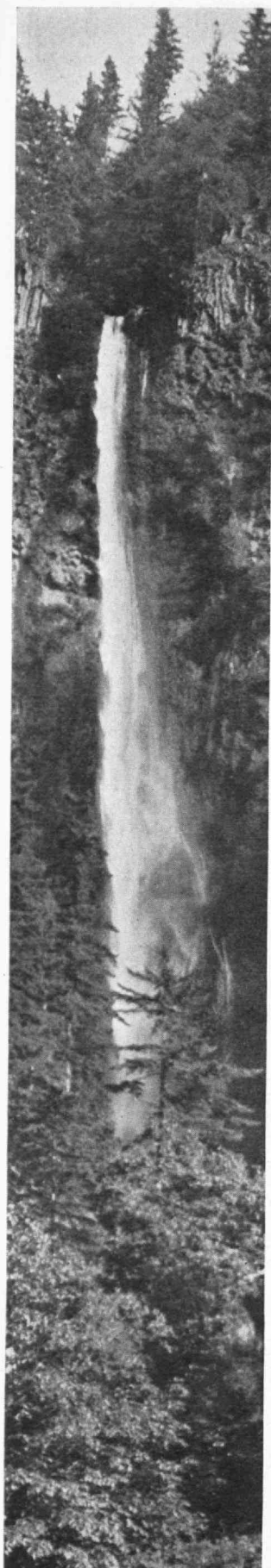


portions of Roosevelt Highway which will become the most direct to the Pacific Northwest. Even now it is the chief port of entry for reaching the Canadian Parks by motor and, except for a thirty mile gap south of MacLeod, Alberta (which is to be graveled in 1929), one can now go from Glacier Park station north to Calgary and thence westward to Golden or Lake Windermere in British Columbia through the Rocky Mountains, Yoho, and Kootenay Canadian National Parks, without leaving graveled highway.

At present, however, much remains to be done on the 503 miles between Williston, N. Dak. (twenty miles east of the Montana boundary), and Glacier Park station, for 159 miles are still unsurfaced dirt. Some miles of this dirt have been graded, but in wet weather the going is often next to impossible. Local inquiry must be made as conditions vary week by

IN GLACIER NATIONAL PARK: ST. MARY'S LAKE FROM GOING-TO-THE-SUN





MULTNOMAH FALLS

week. In midsummer these dirt roads dry out and are often fairly good, though dusty but when a shower softens them, one is apt to get in trouble. The longest single unimproved stretch (about ninety miles from Nashua to a point twelve miles west of Malta, a town infested with mosquitos bigger than horse flies) is in the Milk River Valley, the center of a vast irrigation project. This is the heart of the gumbo belt.

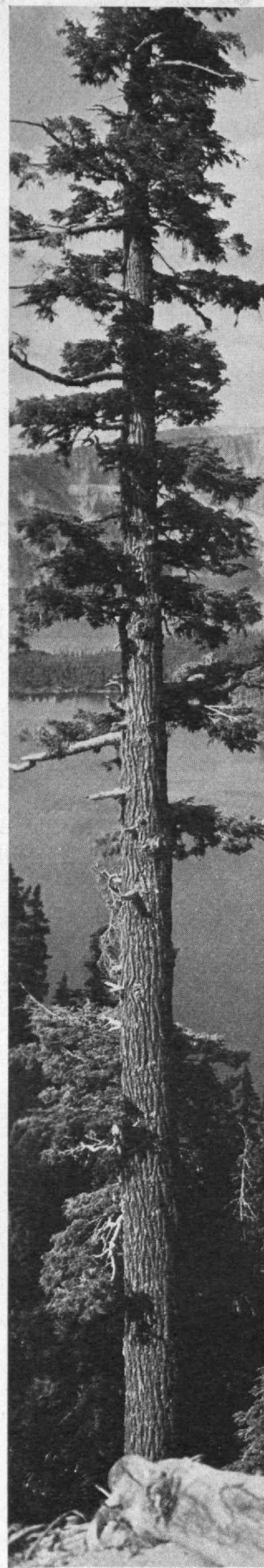
For the benefit of those who never have had dealings with gumbo other than to observe the word on a menu card, Webster's definition of it as used above reads: "A class of peculiar fine-grained, silty soils which are usually devoid of true sand, but rich in alkaline compounds, and which when saturated with water become impervious and soapy or waxy in appearance and to the touch." It is all he says and more but his remarks suffice to make obvious gumbo's limitations as a road-building material. Even the sheep men fear gumbo for it "balls-up" on the feet of their stock and has been known to lame the animals by getting between the toes and splitting their feet.

These bad road conditions are not peculiar to the Roosevelt Highway, since on other Montana through routes (and for that matter those in Wyoming) one encounters hard going, according to the testimony of compatriots who last summer traversed other sections. Even the Lincoln Highway, perhaps the most famous as well as oldest of transcontinental routes, has its unsurfaced portions, although the Iowa mud factor was eliminated when two main cross-state concrete arteries were opened this past summer.

But strictures on Montana's roads are unfair without giving some further idea of her problem. Montana is the third largest State in the Union, her area being one-twentieth of that of the United States or several hundred square miles greater than New England, New York and South Carolina combined. Her total population is but a few thousand more than Buffalo, N. Y., an average of less than four people per square mile. Butte is the only city having as many as 25,000 inhabitants and Worcester, Mass., is four and a half times as large as Butte. The east and west distance across the State is as far as from Boston to Cleveland or from Montreal to Washington. Her largest county, Beaverhead, contains 5,619 square miles with a population of 5,061, less than one man, woman, or child per square mile. Beaverhead County is four times as large as the State of Rhode Island and Montana is 116 times as large as Rhode Island but Rhode Island has one-eighth larger population than Montana.

There is a state tax of three cents per gallon on gasoline and this netted \$1,738,000 during the fiscal year ending July 1, 1928. A license plate tax for automobiles based on S. A. E. horsepower rating is collected by the State, but is returned to the counties for use on county roads. Montana's share of the annual \$75,000,000 Federal Aid appropriation is about \$1,550,000. Thus only about \$3,288,000 is available annually to maintain and reconstruct the main trunk routes of her vast area, and much of the mileage is in the mountains where the cost of grading may run as high as \$50,000 per mile. An effort is being made by the Montana Automobile Association to secure the passage of a bill in the next Legislature increasing the gasoline tax from three cents to five; and this would pro-

(Continued on page 124)



CRATER LAKE

PHYSICS AND MEDICINE

With animadversions on certain methods of teaching each

BY EDWIN B. WILSON

IT IS a very difficult thing to speak about the relationship between the sciences of physics and medicine. When I left college thirty years ago I did not know anything about either, so that I have no real training in either, because we get all our training in college — all *fundamental* training. I had taken two courses in physics of the ordinary college type; lectures, demonstrations, laboratory work, but no recitations, and these did not teach me much about the science of physics. I hadn't had anything at all in the line of the medical sciences.

At the end of my college course at Harvard, where I had been fairly well trained as a mathematician by persons interested in pure mathematics I went down to Yale to continue my studies, and there it was Willard Gibbs who taught me physics — the science of physics.

I should like to draw a slight distinction between the more general term *physics* and the more special term *science of physics*. The boy who tinkers with a radio set or tries to make his old Ford go is undoubtedly getting a certain amount of experience with physics, that is, with physical fact or phenomena, but he is learning very little about the science of physics and may be learning something that may make it all the more difficult to teach him anything about the science of physics. He may be having the fun that it is pretty hard to put into the teaching of the science of physics. For, as I take it, physics comprises the facts, the phenomena of a certain sort in nature, our environment in certain of its aspects; whereas the science of physics has to do, as anyone who has ever taught it or ever hopes to teach it realizes, with the coordination of a small part of our knowledge of physics, the coordination of it into such a system as can be taught. And the same is true of medicine and the medical science. Medicine has, of course, a great many facts, separate facts, a great deal of empiricism; the medical sciences are relatively new and inchoate.

Now Gibbs, who taught me the science of physics, did not teach me very much about the phenomena of physics; he taught the principles, and it is the principles in the main which constitutes the science of physics. In fact, physics is today one of the foremost sciences because, being relatively simple compared, let us say, with medicine, it has advanced to a greater body of general, fundamental, correlated knowledge than has medicine or even chemis-

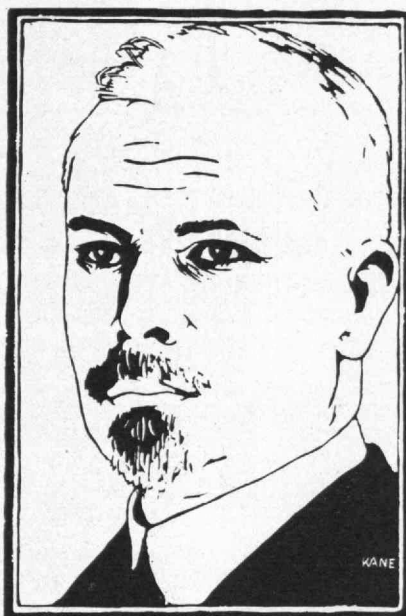
try. It is a question, of course, whether either in medicine or in physics one wishes that the teaching should be chiefly of physics and of medicine, or of the science of physics and of the medicinal sciences. The method one adopts must be adapted to the distinction. If you are teaching the science of physics you will inevitably proceed to select a few of the most fundamental of the principles of physics and lay great emphasis upon them, bringing them in over and over again and showing the student the great diversity of the applications of those fundamental principles. If you wish to teach phenomeno-

logical physics, the facts of physics — well — I don't know exactly how one might proceed, but he might give a demonstration lecture and show a great many facts, perhaps by design showing them faster than the student could possibly take them in as theory and as coordinated knowledge, or one could take the student into the laboratory and get him acquainted with a large number of instruments.

It is the same way in the teaching of medicine. The old-fashioned method of teaching medicine of course, as you know, was by apprenticeship. The young aspirant went with the practicing physician. He saw him practice. He read up the subject, just as a young lawyer went into the lawyer's office and read up the subject and learned the subject of law by an apprenticeship system. It is as though in learning physics one took an apprenticeship to an engineer and went about and helped him run the different types of machines that had to be run. Although there were

medical schools before 1870, I should judge from what I hear that there was very little science of medicine in them, and that in the main the reliance was essentially upon the apprenticeship system. The teaching was mostly by practicing physicians, if not entirely so. Now today everything is quite different. The student has a course in medicine in which for two years the main emphasis is laid upon the scientific aspects of medicine, that is, upon physiology, which is a sort of physics of medicine, upon biochemistry, upon pathology, bacteriology — scientific subjects taught in the main by persons who do not practice medicine and perhaps have never practiced medicine.

It is only in the later years that the young man, who doubtless went to the medical school hoping to learn some medicine, really has a chance to learn medicine as



THE AUTHOR WHO IS PROFESSOR OF VITAL STATISTICS IN THE HARVARD SCHOOL OF PUBLIC HEALTH

he probably thought it was when he entered the medical school. This is a good deal like the engineering school. A boy who has been interested in mechanical or electrical devices goes there. And what does he get for two years? The pre-engineering sciences mainly, a year of chemistry, two years of physics, two years of mathematics, a little drawing, but very little engineering of the sort that attracted him to the school.

The investigator in the medical sciences may have aspirations to do exactly what he pleases, just as a physicist may desire to study the Einstein theory of gravitation and to write papers on it using the tensor calculus. The pure physicist can do it, and he can get a good reputation by doing it, but the person working in the medical sciences will pretty soon find that somebody is looking to him for help, and it is the kind of help in human need that he cannot refuse to give. There are investigators in the medical sciences who talk in the most stately manner of the pure scientist; they would not do a thing to be useful to anybody. Science for science's sake is what interests them. Well, a person who talks that way and who is a mathematician interested in pure mathematics can act the part; he can go right straight through with it and not take an interest in anything but his own pure mathematics. And in physics he can investigate the Einstein theory with the tensor calculus and no other thing. But in medicine he cannot do it; he is not allowed to do it. If he is an expert on bodily efficiency or is a high grade pure scientific physiologist, the first you know somebody will get after him to illuminate the training of the crew, even if not for the relief of human illness. And the pharmacologist, is he not always hopeful that he may find some preparation that will be of specific advantage in some disorder?

One who has had some training in physics would probably be more interested in physiology than in any of the other medical sciences, and if we include in physics the work of Willard Gibbs on the equilibrium of heterogeneous substances we find a very close relationship between parts of physiology and of physics, and then a fairly close relationship between physiology and several other parts of physics. The physicist would not be much interested in pathology, which is very largely a morphological subject. We are so trained in the school of Newton that we want to rationalize and to reason in physics. We do not wish to classify to any great extent; yet there are morphological aspects of physics. The old crystallographical studies were of that sort, but not done by physicists, not in the main. Some parts of the strength of materials and some metallurgical science no doubt have their morphological and classificational aspects. But they do not appeal to physicists, important as they may be to the engineer.

The physicist to a limited extent, at any rate, is free to do what he likes and to disregard what he does

not like. To a greater extent is this true of him than of the engineer or the man in medical sciences, and that is the reason I think that the morphological aspect is not common in physics, unless you could call a course of lecture demonstrations to college students morphological physics and I should rather call it amorphous physics. Yet I think that possibly just because we eschew morphology in physics we have had difficulties in the last twenty years while trying to settle down happily with the strange variety of new phenomena that have been thrust upon us by electrons, x-rays, vacuum tubes, radiation and the like. I think that probably the insistence on the rational or reasoning aspect in physics, the fact that we are all trained to think that way, rather than as the morphologist or classifier or systematic botanist, may actually have retarded the progress of physics in days when we lacked principles, but had to

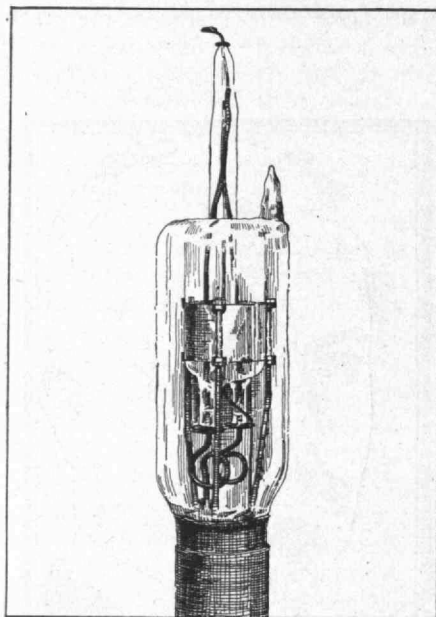
pretend that we had them. A temporary working hypothesis certainly cannot be called a principle, and the fundamental theory of physics, which our young people so freely talk about, changes so fast now that one wonders why they use the word fundamental at all in speaking of it.

I spoke of the relationship between the medical schools and the engineering schools in their methods of teaching, whereby a certain amount, generally about a half of the course, is given to scientific instruction, and then a certain amount, generally about half, the latter half, of the course is devoted to practical instruction. Although those concerned with the problems of teaching physics can probably not modify the present procedure with respect to the distribution of time between the scientific and the practical aspects of

the subject of instruction in engineering or in medical schools, I do think that this distribution of time is a matter which deserves the most thoughtful consideration. It might possibly be changed in due time and, if changed, would undoubtedly have a great bearing upon the instruction of all the sciences either in the medical school or in the engineering school, and also have a great effect upon the instruction of the practical aspects. I myself very seriously doubt whether it is wise to take a young man who comes to an engineering school wishing to learn engineering and keep him for two years learning something which to him is not engineering, or taking a young man who goes to a medical school and keeping him for two years learning something which to him is not medicine, but medical science. I do not know whether it is the psychologically sound thing to do to the student, whether it is encouraging him to work as hard as he can.

Suppose that we carefully distributed the scientific work over the four years of instruction and also distributed the practical work over the four years of instruction, giving perhaps fifty per cent of the time each year

(Continued on page 132)





The Truth about the Thérémin-Vox

CONCERT goers and newspaper readers have either heard or heard about an electrical musical instrument which is played without the conventional laying on of hands. The Thérémin-Vox is the "invention" of a young professor in the Physico-Mechanical Institute of Leningrad, Léon Thérémin (or, as some would have it, Lev Thermin), who has been demonstrating it in the principal cities of Europe and America. The player of the instrument stands before a small console from which protrude two electrodes. Movement of the right hand near one electrode varies the pitch of the sound emitted from a loud speaker; movement of the left hand near the other electrode varies its loudness. Probably because his contrivance uses elements common in radio circuits and because the sound is controlled by the movements of the operator's hands in space, Professor Thérémin calls his demonstration, "Music from the Ether."

After Professor Thérémin's recent demonstration in Boston Edward L. Bowles, S.M. '22, Associate Professor of Electrical Communication at Technology, in commenting upon the Thérémin-Vox said that the electrical phenomenon involved has, in its present form, been generally known to radio experimenters for at least fifteen years. "Professor Thérémin," he said, "has simply made use of the 'heterodyne squeal' or 'beat' which was an almost invariable accompaniment of the broadcast receivers used a few years ago; it is the whistle that today causes so much disturbance when two broadcasting stations try to transmit programs upon almost, but not quite, the same frequency." He explained that oscillatory electric currents of different frequencies may, under properly imposed conditions, be made to interact to produce a third oscillatory current whose frequency (or pitch) is the numerical difference between the two. Professor Thérémin's apparatus generates one oscillatory current of fixed frequency and another whose frequency varies with the position of the operator's hand, the resulting third or "difference" frequency being made to operate a loud speaker after it has been amplified in the conventional manner.

"Several American manufacturers," said Professor Bowles, "have used the heterodyne principle for the past

several years to produce alternating current for testing their radio loud speakers as music reproducing devices. They control the loudness and the pitch of the resulting sound, however, by means of dials instead of movements of the hands." And so, "Although Professor Thérémin cannot be credited with the discovery of a new principle," Professor Bowles added, "he is entitled to recognition for and to the extent that he has succeeded in producing an electrical musical instrument that musicians will accept. It is to be regretted that so many music critics have attempted, with disastrous results, to expound the scientific side of Professor Thérémin's demonstration to the neglect of its musical qualities."

Professor Bowles, in his reference to music critics, referred to those newspaper correspondents who have allowed themselves to leave the familiar shore of music for the ocean of science without first learning how to swim. The *Boston Evening Transcript's* critic, Mr. Nicolas Slonimsky, tried it and floundered badly as the following one out of many instances shows: The editor of *La Revue Musicale* (Paris) contributed to the *New York Times* an essay purporting to show that Professor Thérémin was not the only experimenter with the "idea of using the electro-magnetic field as a medium for production of sounds." He claimed that a M. René Bertrand had an instrument which operated upon a different unnamed principle. "These instruments produce no interference, so that a great number of them may be played at the same



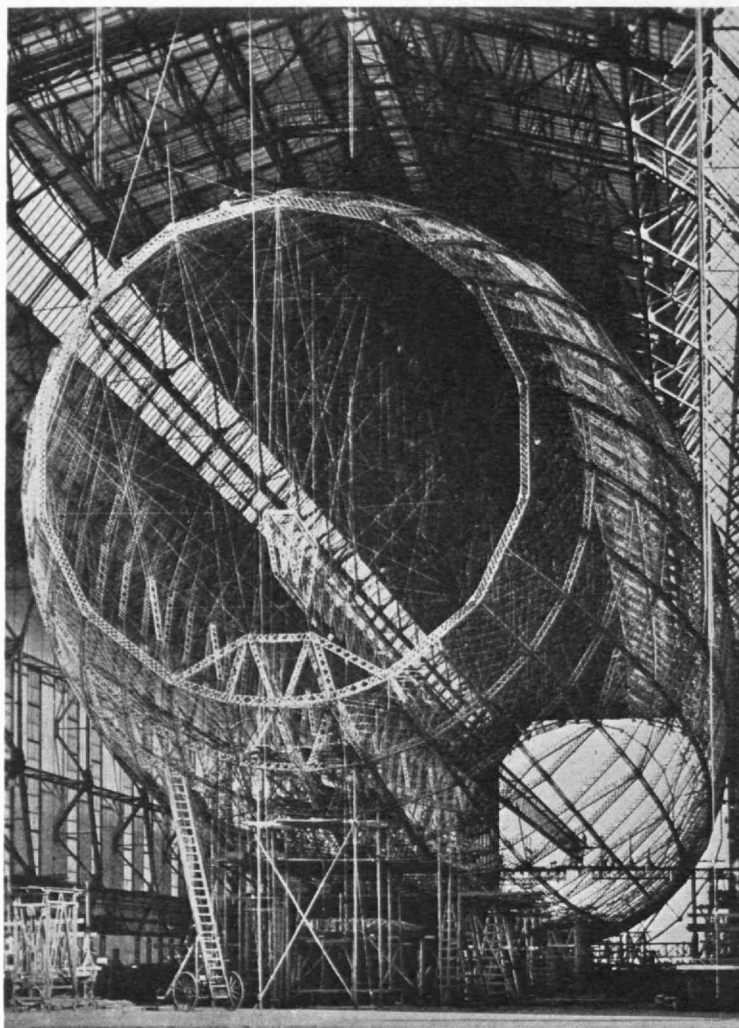
Wide World

LÉON THÉRÉMIN DEMONSTRATING HIS ELECTRICAL INSTRUMENT FOR PRODUCING MUSIC

time. We heard at a concert a veritable orchestra of [them]," he says, and then later goes on, "... The only disadvantage of these various devices is that they produce only a single note, as in the case of wind instruments. One dreams of an organ combining all their marvelous sonorities. ... The fact that M. Bertrand has found out how to eliminate interference gives us ground for all such hope: ..."

At this Mr. Slonimsky jeered, "... But the learned editor of *La Revue Musicale* is apparently not at home with acoustics ... he says that M. Bertrand succeeded in eliminating interference, which sounds strange, inasmuch as interference has never been much of a problem and can be subdued in any electrical device, including that of Professor Thérémin, by generating a negative frequency. ..."

Unfortunately, Mr. Slonimsky, the acoustician, did



EARLY PHOTOGRAPH OF THE GIANT GRAF ZEPPELIN DURING ITS CONSTRUCTION IN GERMANY

not explain what he meant by "negative frequency." He should have explained it because the idea has grave philosophical implications, bound up, as it necessarily must be, with negative time (clocks and calendars running backward) and with musical tones of negative pitch, which should, if realized, open up new and as yet unconquered worlds to Mr. Slonimsky, the pianist and composer.

Zeppelins In Excelsis

WHILE the great dirigible *Graf Zeppelin* lay in the naval hangar at Lakehurst being groomed for the return voyage to Germany, announcement was made that construction of the two huge dirigibles for the United States Navy would be undertaken at once by the Goodyear Zeppelin Corporation.

At Akron, Ohio, headquarters of the Goodyear operations, a hangar which is to

cost between \$2,000,000 and \$3,000,000 is to be built, while construction of the two great airships will be started in other divisions of the Goodyear plant, under the direction of President Paul W. Litchfield, '96, and Vice-President Jerome C. Hunsaker, S.M. '12.

These two ships, largest of their kind in the world, were authorized in the last session of Congress. Announcement that construction would begin followed closely on the news that Secretary of the Navy Wilbur had signed contracts for the ships.

The ZRS-4 and ZRS-5, as the new dirigibles are to be known, will have a gas capacity of 6,500,000 cubic feet as compared with the *Los Angeles's* volume of 2,470,000 cubic feet. They will be 785 feet long, or 126 feet longer than the *Los Angeles*, and will have a useful lift of 183,000 pounds in comparison with 60,000 for the latter.

Unlike other ships of their type, the engines of the two projected ships will be housed within the hull, power being transmitted to the propellers by means of transverse shafts and bevel gear systems. A reduction in resistance and greater safety are said to be assured by placing the power cabins within the hull. Another unique feature of the power plants will be a mechanical arrangement by which it will be possible to alter the axis of each propeller, allowing them to be turned to the vertical position to aid in landing or leaving the ground.

Most striking of all, however, is the announcement that within the huge hulls of the ships will be hangars for the storage of five scouting airplanes, the launching of which will be accomplished by lowering the machines through large sliding doors by means of a trapeze of unique design. Planes for use with the dirigibles will be equipped with special hooks above their wings for attaching to the trapeze suspended beneath the zeppelin.

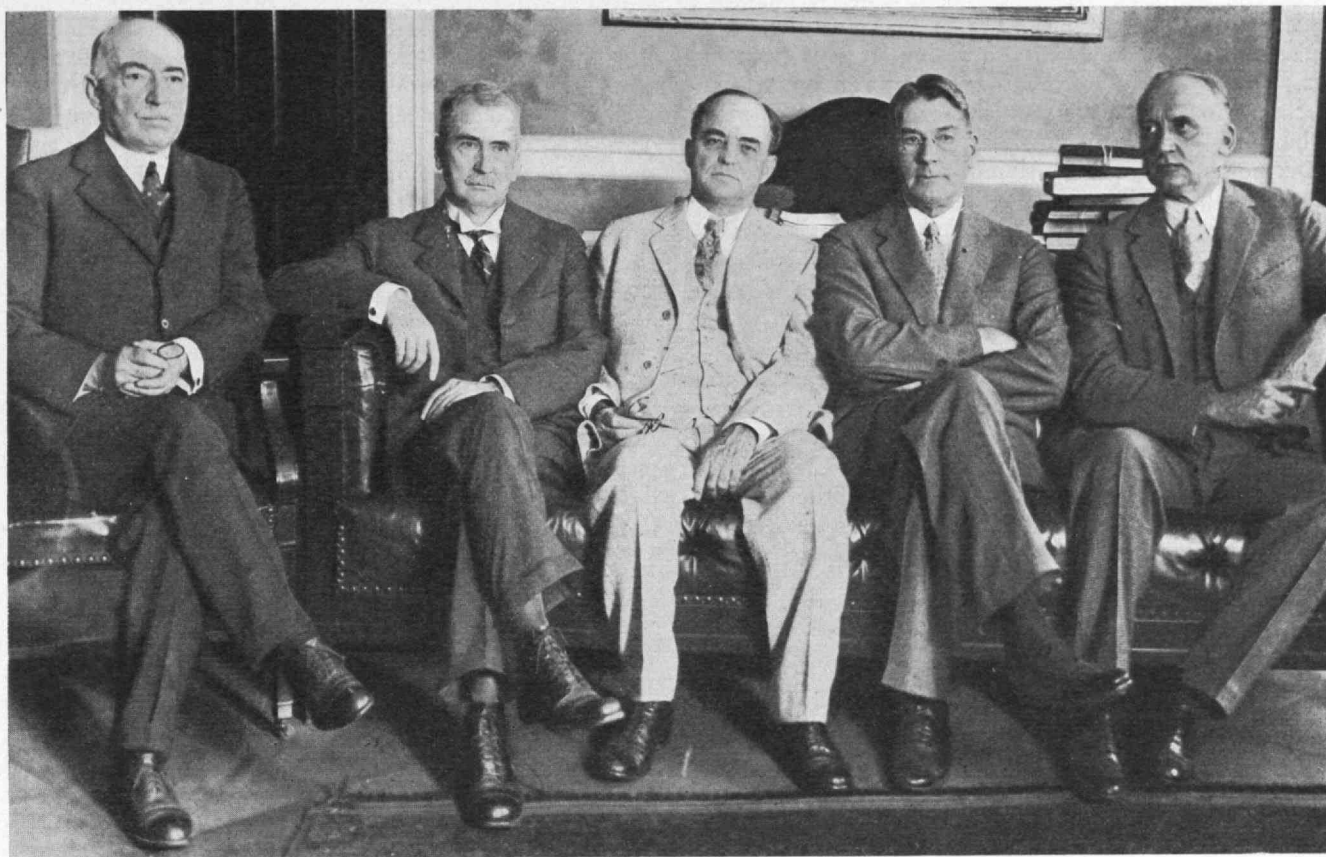
From the experience in building the *Los Angeles* and from the lessons learned in the *Shenandoah* disaster have come many changes and improvements in design and construction. In The Review for November, 1925, Professor Edward P. Warner, '17, in charge of the Course in Aeronautical Engineering, and now Assistant Secretary of the Navy for Aeronautics, discussed the problems of

airship construction. In writing at that time of the prospect for building larger dirigibles, he said in part:

"The larger ship certainly has very distinct advantages. If the horsepower of the engine is increased with the same ratio as the total lift there is a steady gain of speed with increasing dimension, and a corresponding increase in the possible radius of action at a given cruising speed. The possession of more speed means more effective maneuvering and consequently a



THE COMFORTABLE SALOON OF THE GRAF ZEPPELIN, THE RECENT VISITOR TO AMERICA



Wide World

MEMBERS OF THE SUBMARINE SAFETY COMMITTEE NOW HEADED BY PRESIDENT STRATTON. LEFT TO RIGHT: REAR ADMIRAL JOSEPH STRAUSS, RETIRED; REAR ADMIRAL DAVID TAYLOR, RETIRED; DR. W. R. WHITNEY, '90; SECRETARY OF THE NAVY CURTIS D. WILBUR; AND T. A. SCOTT

better chance of avoiding a storm if only short warning of danger is had." These statements have been borne out in the building of the new dirigibles.

The new ships will have a maximum speed of 72.8 knots per hour as compared with 63.5 knots for the *Los Angeles*. The predicted cruising range of these ships at 50 knots per hour, is 9,180 nautical miles while the *Los Angeles's* range is but 3,500 miles.

The hulls of the new dirigibles will be of duraluminum, longitudinal and transverse girders will have wire bracing, and the girders will be of new design, the Navy announced. Plans provide for no less than three longitudinal corridors leading completely around the circumference of each main transverse frame. These passageways will give immediate access to all parts of the ship for inspection, and make possible repairs during flight.

In addition to changes in design and the increase in dimensions, much attention has been given to the quarters of the personnel. The crew of the new ships will have comfortable sleeping and mess arrangements, and ample cooking facilities are to be provided. These accommodations, according to Secretary Wilbur, will be comparable to the quarters of officers and crews on light cruisers.

The Goodyear Zeppelin Corporation was awarded the contracts for the new ships after a competition in which many designs were submitted. Early in 1925 (see *The Review* for January, 1925) Mr. Litchfield announced that, having purchased the American rights to manufacture dirigibles of the Zeppelin type, the company would begin development of its plant. Now that plant is the largest in the country.

In the Service of Aesculapius

THAT the physician and the engineer are drawing closer in their striving toward the common goal of human welfare is indicated anew in the election of George W. Fuller, '90, a distinguished engineer, as President of the American Public Health Association at the Fifty-Seventh Annual Convention in Chicago, October 15 to 19.

The engineer, the public health expert and the physician no longer follow their several paths alone. Each is finding that his work holds much of interest for the other; that the pace of progress quickens with new understanding, and that there is a common goal whether the task be ministering to the ills of the individual, a great engineering sanitation work, or supervision of public health.

One of the most important reports made during the convention was that of the central committee on training and personnel of which Professor Clair E. Turner, '17, was chairman. The report, which concerns the minimum basic training for those anticipating entering the public health profession, was made after a study of two years. Its recommendations, it was said, are most valuable and should prove of great service in the modification of curricula dealing with public health administration and engineering.

Fundamental training for public health service, the report set forth, should include physiology and personal hygiene, bacteriology and its application to public health, public health engineering, vital statistics and

epidemiology, community health organization and education. Such fundamental training, it was pointed out, should be an excellent foundation upon which specialization in the various fields of public health may be built.

During the convention Alumni of Technology to the number of more than fifty, gathered for a breakfast at which Professor Samuel C. Prescott, '94, Head of the Department of Biology and Public Health, presided.

Progress in Aviation

FOG no longer troubles the aviator in ordinary flight for he has instruments to help him hold his course and to keep an even keel while flying "blind." But let him try to land when fog obliterates all landmarks. "Where is the edge of the landing field?" he asks, "and is the ground two or is it fifty feet below me?" A means of answering these questions must be given the fog-bound flier if aerial transport service is ever to become commercially successful; and the Daniel Guggenheim Fund for the Promotion of Aeronautics, of which Captain Emory S. Land, '07, has recently been made a Vice-President, has undertaken to provide the means. Under the direction of Lt. James H. Doolittle, S.M. '24, an engineer with the Army Air Corps and a practical flier who was the first man to complete successfully the outside loop, who was the first to fly over the Andes, and who won the Jacques Schneider Trophy for seaplane speed in 1925, every available and projected fog flying device will be tried out under flying conditions.

Among the devices to be tested will be the sonic altimeter, an instrument derived from the sonic fathometer used in navigation; the capacity altimeter which depends for its operation upon the increase in the electrical capacitance of the plane as it nears the earth; and others upon which Dr. William D. Coolidge, '96, is said to be working. As the researches of the Guggenheim Fund progress, a dual controlled plane will be equipped with the instruments under test in which Lt. Doolittle will practise landing, first with the ground visible and next with his view of the ground cut off, a second pilot being ready to take over the controls to avert an accident. Then, after sufficient practice, he will try to land in fog with only the instruments to guide him, a test of skill and nerve that should add more thrills to his already thrill-filled life.

Before leaving Dayton, Ohio, to undertake his new work for the Guggenheim Fund, Lt. Doolittle accompanied by Capt. Albert W. Stevens as observer and photographer, piloted a plane to an altitude of 37,200 feet. The temperature was -70° F., and the air was so rare that when the oxygen supply failed, just before nosing down the plane for the return trip, Capt. Stevens became unconscious and Lt. Doolittle lapsed into semi-consciousness. Fortunately, both regained their senses.

Photographs of the ground taken from the maximum height recorded the principal features of approximately thirty-three square miles of the earth's surface, and these were sharp and distinct enough to permit of enlargement. They were, however, not made for mapping but for the purpose of calculating the altitude attained. The altitude of the plane can be computed when the focal length of the lens is accurately known by measuring on the photograph the distance between two points whose distance apart on the ground is known.

Activity in New York

HERPETOLOGICAL investigations in Shansi and Shensi Provinces in China and experiences as a member of Roy Chapman Andrews Central Asiatic Expedition will be reported in an illustrated address by Clifford H. Pope before the Technology Club of New York on the evening of December 4.

Mr. Pope, secured by the Club as one of a series of lecturers, has specialized in the study of creeping things, or herpetology. He is a Georgian and soon after graduating from the University of Virginia joined the above mentioned expedition and thereby became an associate of Frederick K. Morris, Assistant Professor of Geology at the Institute and author of "The Biology of Racial Problems" published in The Review last February.



CLIFFORD H. POPE, HERPETOLOGIST OF THE ROY CHAPMAN ANDREWS CENTRAL ASIATIC EXPEDITION, WHO SPEAKS BEFORE THE TECHNOLOGY CLUB OF NEW YORK ON DECEMBER 4

The Tale of a Hat

PRESIDENT COOLIDGE was photographed in many hats last summer; ten gallon sombreros, Indian headdresses, and a panama. A good tale might be built around each of the headgear that graced the presidential brow, but one comes ready-made from Balboa concerning the panama aforementioned which Mr. Coolidge wore.

The essence of the story is that the President got the hat by a fluke and that it was originally intended for Meade Bolton, '16, chief architect of the Panama Canal, who was to receive it as a prize for winning a golf tournament. The prize was offered by Mel Cordua, manager of the All-America Cable Company in the Canal Zone, and when Bolton won the tournament his measurements were sent to Ecuador for the making of a hat of especially fine quality. In the meantime Cordua left Nicaragua and the hat was sent to Colon to Señor Alfaro, the Ecuadorian Minister.

So Alfaro decided to present the hat to a noted Cuban jurist passing through Panama, and when that gentleman reached Havana he in turn bestowed the hat on President Machado. When President Coolidge visited Havana to open the Pan-American Union Conference, President Machado, wishing to give him something typical of Latin America, presented the panama hat to Mr. Coolidge. Asked if he wanted the hat back, Mr. Bolton said he did not, as a duplicate had been made and given to him.



In the Lecture Rooms

WITH the coming of December the lecture season opens with an imposing display of precursory posters and thumb tacks on Institute bulletin boards. Again this year the Society of Arts announces its series of Popular Science Experimental Lectures, and from the office of Vannevar Bush, Eng. D. '16, in charge of the Aldred Lectures comes a notice that this annual series endowed by John E. Aldred is to begin this month. The lectures are given by outstanding leaders in science, engineering and business, who present for the benefit of upper classmen the lessons of life learned during years of experience.

The first of the Aldred lecturers will be Victor M. Cutter, President of the United Fruit Company, who will speak on "Pioneering and Engineering in the American Tropics." Following him at intervals during the winter will come Walker D. Hines, President of the Cotton-Textile Institute, Inc.; Merlin H. Aylesworth, President of the National Broadcasting Company; Owen D. Young, Chairman of the Board, General Electric Company; and Frank B. Jewett, '03, President of the Bell Telephone Laboratories.

The first of the Society of Arts lectures for the public will be given on December 14, when H. Monmouth Smith, Professor of Chemistry, will discuss "Some Gases — Useful and Harmful." Professor Gordon B. Wilkes, '11, of the Department of Physics will lecture on "Artificial Cold and its Applications" on January 13. "Why an Airplane Flies" will be the subject of a lecture by Charles H. Chatfield, '14, Associate Professor of Aeronautics, on February 10. Arthur C. Hardy, '18, Associate Professor of Optics and Photography, will deliver the last of the series on March 10, when he will lecture on "The Nature of Color and its Measurement." The custom of giving each lecture twice for high school and preparatory school students and once for the general public will be continued.

Henry Paul Talbot Laboratory

IN fitting commemoration of the former Head of the Department of Chemistry and Dean of Students, Henry P. Talbot, '85, who died on June 18, 1927, the Institute's laboratory for research in inorganic chemistry has been named in his honor. When the new laboratory

was dedicated, a portrait of Dr. Talbot was unveiled. This was presented by Mrs. Talbot who was present at the ceremony. Dr. Frederick G. Keyes, in charge of the Department of Chemistry at the Institute, presided over the gathering, while Professor H. Monmouth Smith, in charge of the Division of Inorganic Chemistry spoke on the life of Dr. Talbot.

Three Deaths

WITHIN a week occurred the deaths of two retired professors of the Institute, colleagues for more than a quarter of a century. Peter Schwamb, former Professor of Machine Design at Technology, died suddenly at his home in Arlington on November 3, aged 71 years. Thomas Eliot Pope, former Professor of Inorganic Chemistry, died at Whitinsville, Mass., on October 30.

Professor Schwamb was born in Arlington on February 13, 1858, educated in its public schools, and was graduated with the degree of S.B. from the Institute in 1878 from the Course in Mechanical Engineering. After five years of work outside the Institute as a draughtsman, he was offered the position of instructor on the Institute staff in Mechanical Engineering and Director of Workshops, which he held from 1883 until 1884. During this time he acted as aid to Professor Lanza, a pioneer in this department. From 1884 to 1888 he was Assistant Professor of Mechanism and Director of Workshops, and from 1888 to 1896, with the exception of a short absence during 1890 and 1891 when he went on a trip around the world

for his health, he was Associate Professor in the same Department. He became full Professor in 1896 and had this title changed to Professor of Machine Design and Director of the Mechanical Laboratories in 1901, in which capacities he continued until his retirement in 1911. He then took up a position as Treasurer of the Theodore Schwamb Company in Arlington for the manufacture of piano cases. With Professor A. S. Merrill, '85 he was the author of "Elements of Mechanism." He acted as consulting engineer for many important works, including the mounting of the one hundred-inch reflector of the Mount Wilson Observatory in Pasadena, Calif.

Professor Pope had been for nearly thirty years a member of the Department of Chemistry at Technology. He was educated at Harvard College, where he received the



ALEXANDER MACOMBER, '07, PRESIDENT OF THE ALUMNI ASSOCIATION AND OF THE ALUMNI COUNCIL



Fairchild

THE INSTITUTE AND ITS SURROUNDINGS PHOTOGRAPHED FROM THE EAST. TO THE LEFT MAY BE SEEN THE LARGE TRACT OF LAND WEST OF MASSACHUSETTS AVENUE AND NOW OWNED BY THE INSTITUTE

degree of A.B. in 1869, and of A.M. in 1872. In 1874 he became an instructor at the Institute in the Department of Chemistry, but in 1876 he left for a time to fill the Chair of Chemistry at Iowa State College at Ames, Iowa. He returned to the Institute as Assistant Professor of Analytical Chemistry in 1884. There followed a number of years when he was in turn Assistant Professor of General Chemistry, Associate Professor of General Chemistry, Professor of General Chemistry, and Professor of Inorganic Chemistry. This last position extended from 1901 to 1913, when he gave up teaching and was made a Retired Professor.

Frederick K. Copeland, '76, a member of the Corporation from 1906 to 1910, died in Claremont, N. H., on November 11. He had gone there from Chicago on a business trip and succumbed to an acute attack of appendicitis. Mr. Copeland, who was a descendant of William Bradford, first Governor of the Massachusetts Colony, was President at the time of his death of the Sullivan Machinery Company. After being graduated from the Institute, he engaged in coal mining in Iowa and Colorado. In 1884 he organized the Diamond Prospect Company which subsequently merged with the Sullivan Machinery Company, manufacturers of mining equipment. In 1910 he was President of the Technology Club of Chicago.

Prize Song Contest

ANNOUNCEMENT has been made by the Prize Song Committee that this year is the fifth and last year of the Prize Song Contest. Alumni, members of the staff, and undergraduates are eligible to submit compositions (which must include both music and lyrics) and must do so before February 1, 1929, to Harold W. Fairchild, '29, of 338 Harvard Street, Cambridge. The object of the Prize Song Contest is to obtain new Technology songs and to foster an interest in singing them. It is sponsored by *The Tech*, Tech Show, Combined Musical Clubs, and the Alumni Association. A prize of \$200 will be presented the winner this year as has been the custom. The judges of the contest are Henry G. Pearson, Head of the Department of English and History, Allan W. Rowe, '01, and Donald G. Robbins, '07. At the present time the undergraduates are preparing a Song Book which will include "Take Me Back to Tech," "The Stein Song," and the Prize Song Contest selections.

The Care of Student Health

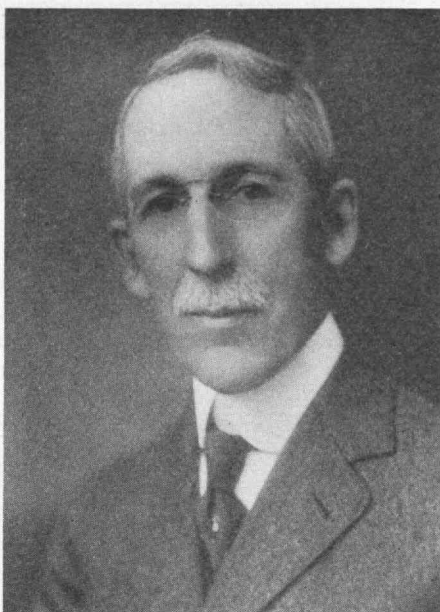
FOR years those interested in the health of the Technology community have looked forward to the time when the Department of Hygiene would have the facili-

ties for carrying on all the functions of the ideal college medical department: providing adequate care for the sick and injured; and guarding and improving the health of its students, its instructing staff, and its employees. The last formal step toward the acquisition of those facilities was taken on November 13 when the Richard M. Homberg Memorial Infirmary was dedicated, giving to the Institute a fully equipped clinic and hospital. Although the Infirmary opened its doors early in June, the dedication had been postponed until the donors, relatives of the late Richard M. Homberg, '23, could be present.

After William Rosenwald, '24, had made the presentation address on behalf of the Homberg family, Dr. George W. Morse, Medical Director of the Institute, and Dr. Allan W. Rowe, '01, Secretary of the Alumni Advisory Council on Athletics, spoke briefly. The dedication address was delivered by Dr. Haven Emerson, Professor of Public Health Administration in Columbia University. His article in this issue of *The Review* contains the substance of his address. Dr. Samuel W. Stratton, President of the Institute, presided.

The Infirmary is located in a four-story wing of the Institute buildings and was constructed for the purpose during the last academic year. On the first floor is the office of the Medical Director; the first aid room; the nose, throat and dental clinics; four large examination rooms; eight dressing chambers; a filing room for records; and a large waiting room that is as comfortably furnished as the lounge in many a men's club. No definite disposition has yet been made of the space on the second floor, pending which *The Review* and one of the physiology laboratories of the Department of Biology and Public Health occupy a part of it. On the third floor is the hospital or infirmary proper, with two five-bed wards and four private rooms, a kitchen, and an operating room with its accompanying sterilizing laboratory. None but emergency operations will be performed. The fourth floor is given over to a solarium and a tile-paved sun porch.

Not only has the new Infirmary made it possible for the Institute to give hospital care to its sick, but it has made possible more medical attention for the well. Heretofore lack of space has prevented requiring physical examinations of any but entering students, candidates for athletic teams, and members of the advanced R. O. T. C. course; but beginning this fall every male civilian student who is in residence must present himself for an annual examination that compares favorably in its strictness with examinations given by the Army. Approximately 1,600 men had presented



H. MONMOUTH SMITH, PROFESSOR OF CHEMISTRY, WHO WILL DELIVER THE FIRST SOCIETY OF ARTS LECTURE ON DECEMBER 14

themselves up to the day of the dedication, and about 1,160 were yet to be seen.

Dr. Morse, in his talk at the dedication, gave statistics showing the number of calls at the clinic, the number of physical examinations given, the number of freshmen examined, and the number of men with defects in the freshman class. These are represented in the accompanying chart. The Department will be able to make an annual search for physical defects in every student. Since July 1 the new clinic has had 5,219 requests for treatment, and the hospital has treated forty-eight.

Alumni Council: 135th Meeting

FOLLOWING precedent, the governing body of the Alumni Association, the Council, convened the last Monday in October in Walker

Memorial. Its President, likewise President of the Alumni Association, presided for the first time since he assumed office at the beginning of the fiscal year on July 1. Having last spring escaped the formalities of induction into office and introduction to the Council, he opened the meeting with a narrative of his accession to the Presidency, an expression of his appreciation for being chosen, and a statement of his desire for an active, profitable year.

The business of the evening was brief. Reports from the Acting Secretary-Treasurer, the Chairman of the Committee on Audit and Budget, and the Secretary of the Executive Committee were heard, accepted and placed on file. Facts included in the first and last of these three reports revealed that the Association, despite a small operating loss incurred last year, now has a substantial surplus, and that the collection of dues for the current

DEPARTMENT OF HYGIENE

CLINIC CALLS - EXAMINATIONS - DEFECTS OF FRESHMEN

YEAR	TOTAL REGISTRATION	CLINIC CALLS	TOTAL PHYSICAL EXAMINATIONS	TOTAL FRESHMEN EXAMINED	TOTAL DEFECTS IN FRESHMEN	%
1922-1923	3180	17826	1181	592	213	36%
1923-1924	2949	14548	839	559	207	37%
1924-1925	2938	11906	1117	577	117	20%
1925-1926	2813	19129	1637	511	163	32%
1926-1927	2871	16155	1390	495	141	28%
1927-1928	2712	17196	1448	592	239	40%
TOTAL	17463	96760	7612	3326	1080	32%

year is running several weeks ahead of last year. Acceptance of 115 applications for membership in the Alumni Association from former students was announced together with the names of five new Council Members selected by the Committee to Nominate Representatives of Local Associations. These were: John A. Herlihy, '11, (Detroit); J. Warren Horton, '14, (Manchester); Franklin T. Towle, '08, (Utica); Norman Lombard, '05, (San Francisco); and Theodore A. Mangelsdorf, '26, (Atlanta). These men were introduced to the Council as well as Roy W. Chandler, '12, representative of The Technology Club of Western Pennsylvania, who was attending his first meeting as a representative of this club.

Likewise in line with the precedent of the past several years the business of the evening was followed by a program of speeches. The Council being a body of precedents, still another was adhered to in that the first speakers of the meeting were new and retiring members of the Corporation. Of the three new members elected by the Association last spring, only William E. Nickerson, '76, was present, and he read a paper on his conception of the work of a Corporation Member. Letters from the other two, who were unable to be present, were read by Mr. Macomber. Of the three retiring members, Walter Humphreys, '97, and Charles R. Main, '09, were present and spoke briefly of their experiences on the Corporation and its accomplishments during their tenure of office. A letter from the third retiring member, Willis R. Whitney, '90, was also read by the President.

After this round of testimonials, remarkable in that three out of the six new and retiring were there to have their say and said it well, the President of the Senior Class, seen by the Council last year as President of the Junior Class, stated the platform of his party, reported its achievements to date, and outlined its plans for the future, with particular reference to the discontinuance of Junior Week. As last speaker of the evening and *tour de force* of the program came the Institute's Bursar, Horace S. Ford, with a lucid array of facts about the operation of the Institute. He ended with a peroration on the administrative conduct of the Institute, and during the abundant applause which followed, a familiar figure burst in. It was Orville B. Denison, '11, former Secretary-Treasurer of the Association, and now located in Syracuse. Mr. Macomber called upon him and Mr. Denison replied graciously, expressing good wishes for the Association's future. Forthwith the meeting was adjourned.

Bas-Relief

THE unveiling of a bas-relief placed in the Institute buildings in memory of Mrs. Ellen H. Richards, '73, which was to have been held at Commencement time last June was postponed because of the failure of the sculptress, Bashka Paef, to finish the tablet. December 3 has been set as the date for the ceremony. The new program is essentially the same as that announced in the May issue of The Review: presentation of the tablet to the Institute on behalf of Alumni and friends of Mrs. Richards; its unveiling by her husband, Professor Emeritus Robert H. Richards, '68, sometime Head of the Department of

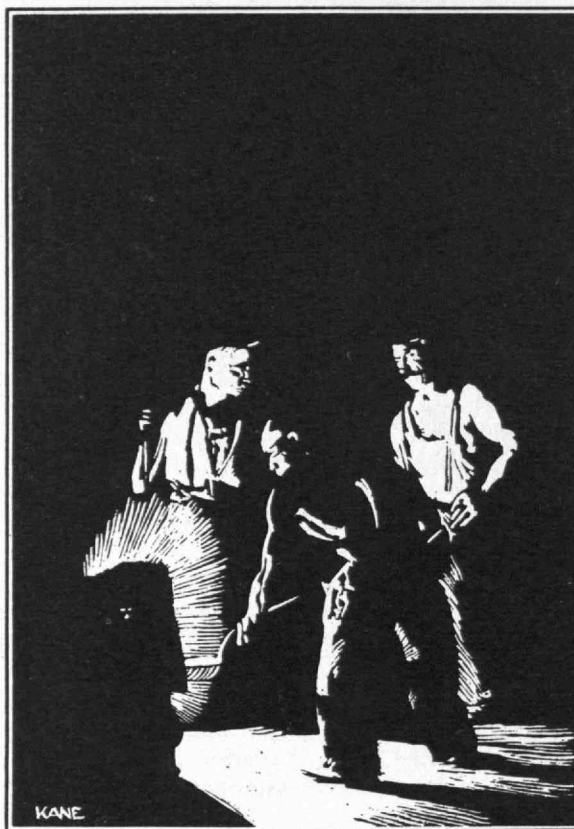
Mining and Metallurgy; and its acceptance on behalf of the Corporation of the Institute by Professor Samuel C. Prescott, '94, Head of the Department of Biology and Public Health. Other speakers are to be William E. Nickerson, '76, member of the Corporation; Alice F. Blood, '03; and Ruth Wheeler, Professor of Physiology and Nutrition at Vassar College, from which Mrs. Richards was graduated in 1870.

Mrs. Richards achieved her fame at Technology on three counts: as the first woman to be graduated; as an authority in the field of sanitary chemistry, having been in charge of that laboratory for twenty-seven years; and as the wife of Professor Richards. She assisted her husband in his professional work and at the same time avocationally became more and more interested in the scientific aspects of home economics, the chemistry of food, and other

matters of public health. She was the active spirit of the home economics movement, and it is interesting to note that she coined the now popular word "euthenics," meaning the "science of controllable environment."

The Institute Library lists in its catalogs some thirty books, pamphlets, and monographs by Mrs. Richards dealing with chemistry, metallurgy, sanitation, and euthenics.

Her leadership and influence among women became widespread and her brilliant career stimulated many others to try and do likewise. The first move for a memorial to Mrs. Richards was made in 1924 on the "tenth anniversary" (a mistake hardly understandable, for she died March 30, 1911) of her death, when a joint committee of the Alumni Association and the Technology Woman's Association voted that a bronze bas-relief presented in the name of the Alumni would be a most fitting memorial. Its unveiling has been tentatively announced several times, but delays of one kind or another have prevented.



FROM A DRAWING BY HENRY B. KANE, '24



BOOKS



Travel • • Pen and Ink • • Balboa

A Modern Sterne

UNDISCOVERED FRANCE, by Emile F. Williams, '78. \$7.50. 307 pages. Boston: *Houghton Mifflin Company*.

WHEN a Technology man writes it is usually about some aspect of his professional work, so it is of special interest to review a book written by a civil engineer and having for its title "Undiscovered France."

The book shows a real knowledge of the French genius of architecture and archaeology, and an appreciation of all that is beautiful, from tapestries to reliquaries, and from sculpture to gastronomy. Through it all is a web of history and philosophy that in itself is ample reason for reading the book. And it is this allopathy that makes the book so worth while. It is more than a guide; it is a pleasant fireside companion that instructs and pleases.

He leads us along fascinating automobile roads, through the peculiar Romanesque architecture of Poitiers and Perigeux to that dream place, Rocamadour; through towns like Moissac, Toulouse, and fortress-like Albi, with their unspoiled mediaevalism; through charming unknown places to Le Puy, which, with its habitations and chapels on seemingly inaccessible crags, reminds one of the marvels encountered by the traveler. His descriptions cover that part of France from Angers and Bourges on the north to Cévennes on the south and almost to the Rhone and the Saône on the east.

The three hundred and five photographic illustrations bring back to us glimpses of chateaux, of old houses, and of churches. The book is well indexed and even has a bibliography which includes our William Emerson's "Old Bridges in France."

If you intend to travel in France the book will be a help. If you cannot travel, then the book will be a solace. May more civil engineers venture into far-away fields if the harvest will be as profitable as we find in "Undiscovered France."

HARRY J. CARLSON, '92

In Black and White

DRAWING WITH PEN AND INK, by Arthur L. Guptill, '16. \$8.50. 431 pages. New York: *The Pencil Points Press, Inc.*

THE introduction by Franklin Booth, except for the celebrity of its author, seems rather unnecessary, for its main purpose appears to be the justification of such a volume. No one who has the slightest knowledge of pen and ink work will deny the need for just this type of book when it presents the subject in such a manner as has been done here.

Drawing, no matter in what medium, is something which no one can learn in a few easy-to-read lessons. Correspondence schools which attempt it are numerous. Mr. Guptill has no idea of this sort in mind. What he

does is to set forth in sufficient detail the methods which are available, the materials one may use, and the tricks of the trade which are little known outside of professional circles.

The book is profusely illustrated, both with sketches by the author and with carefully selected works of both the better and lesser known artists. There is no thought of competing with the Art Annual or any such book in outstanding examples of work. Each drawing has a definite relation to the text and explains clearly some point which is being made — some style or trick which can be shown only by illustration. And Mr. Guptill has included in this way work by such men as Willy Pogany, Sam Chamberlain, Aubrey Beardsley, Rockwell Kent, Walter Jardine — in fact, most of the outstanding modern workers in pen and ink, even down to John Held, Jr.

By training an architect, the author has very naturally devoted a large section to architectural representation. It is a subject, however, which will bear much studying by the ordinary run of commercial artists who only too often are totally at sea when confronted with a problem involving this sort of work.

No feature has been left untouched. Beginning with the most elementary instructions as to the kind of pens, paper and ink which may be used, the book progresses through pen handling, value study, and light and shade until it reaches building rendering, decorative drawing, and reproduction methods.

The book is well worth the attention of any one at all interested in any phase of pen (or brush) and ink work.

HENRY B. KANE, '24

Balboa

SAILS AND SWORDS, by Arthur Strawn. \$3.50. 341 pages. New York: *Brentano's*.

EIGHT years of research and writing have produced an account which covers an equal period of the life of Vasco Núñez de Balboa, discoverer of the Pacific Ocean and compeer of Francisco Pizarro and Hernando Cortés, Spanish conquerors of Peru and Mexico. Mr. Strawn's narrative opens in September, 1510, when Balboa, an absconding debtor, and his bloodhound left Isla Española (Haiti) as a stowaway in a hogshead of pork aboard the relief ship of Bachelor Fernández de Enciso, bound for Tierra Firme to succor the expedition of Captain Ojeda. It closes on a dismal afternoon in January, 1519, when at the age of forty-four Balboa was beheaded at Aclá on the Isthmus of Panama, "a victim of the envy and malice aroused by his own great deeds."

Tierra Firme included that part of South America which was to become known as the Spanish Main and the coast of Central America. Here Christopher Columbus had found gold and pearls, thus making it inevitable that the Spaniards would attempt to establish permanent colonies

in these lands. Isla Española in 1510 was under the governorship of Don Diego Columbus, son of Christopher, and its population numbering some 5,000 varied from grantees to jail-birds, "a strangely assorted lot, usually having little more in common than their Spanish ancestry and an indomitable lust for gold." Not without reason did Columbus exclaim, "I swear that numbers of men have gone to the Indies who did not deserve water from God or man."

Isla Española was the main outpost of Spain in the New World and its chief settlement was the port of Santo Domingo. From here Captain Ojeda had embarked in November, 1509, with four ships and 300 soldiers, bearing a Royal Commission to establish a settlement on the mainland. He had persuaded Bachelor Enciso to follow ten months later with reinforcements and among these Balboa had intruded himself unasked.

"But instead of gold and pearls the gallant Ojeda and his company had found hunger and death." All that remained for Enciso was a detachment which he came upon near the present site of Cartagena. It consisted of thirty-five wretched survivors commanded by Ojeda's lieutenant, Francisco Pizarro. Thus Pizarro and Balboa met and henceforth Pizarro figures prominently in the career of Balboa. For Pizarro stood at his side when he saw the South Sea, Pizarro heard with Balboa the description of the wealth of Peru by Cacique Tumaco, and Pizarro it was who arrested Balboa and placed him in chains at Aclá.

Three years following their meeting saw the colonists established on Darien with Balboa *de facto* ruler. Enciso had been deposed; other claimants killed, exiled, or subdued; the Indians conciliated or massacred. Meanwhile, friendly messengers had been sent back to Isla Española and to Spain to plead the cause of Balboa. Also to these seats of authority had hastened Enciso and others to submit their grievances.

Communication with Europe was slow and made uncertain by frequent shipwrecks and, moreover, the spirit of the times was to bestow awards upon the most skillful liars providing their fabrications were supported by generous bribes. Uncertain as to whether he would be superseded by a new governor from Spain bearing an order for his arrest, Balboa daringly resolved to proceed without further delay in his quest of the Southern Sea. "If he failed, he would meet death in a glorious adventure. And if he succeeded, so much greater the glory."

On September 1, 1513, he sailed up the coast from Darien with a company of 190 and four days later debarked at Aclá, now the starting point of his greatest triumph and later to be the scene of his greatest misfortune. From Aclá he set out over the Isthmus, a region so impenetrable and so dangerous that until within the last fifty years almost every effort to cross it resulted in failure and usually in disaster. Added to the natural difficulties of terrain and fearful climate, his band met opposition from the natives, although some who were friendly furnished guides and food.

After many discouragements, their number being reduced to sixty-seven, they were confronted and outnumbered ten to one by an Indian force opposing their passage of the mountains. But firearms proved more than a match for the weapons of the Indians; a single volley turned them in headlong flight "pursued by the half-

starved Spanish dogs and their still hungrier masters." Six hundred Indians were slain; Balboa and his companions ascended the mountain wall.

The next day, September 25, at about ten o'clock in the morning, a native guide pointed to an eminence from which, he said, the ocean could be seen. A halt was called, Balboa proceeded alone, then beckoned the rest to approach. In the distance they gazed upon his goal.

From Mr. Strawn's pages, Balboa emerges a character strong in will and inflexible of purpose. His deeds left a mark on history and he should not have had to wait four centuries for the first biographer to sum them up in English language. On these grounds the present volume is justified. It is a pity, however, that the title is so inapt and innocuous for it is not a story of sails or of swords; it is a story of a man.

Aside from the discovery of a new ocean there is little of romance in Balboa's sturdy exploits. Like the other *conquistadores* his record drips with blood-letting. It is a chronicle of cruelty and intrigue, of violent deeds, of unbridled hatreds and jealousies, impelled not by an ambition to find in the New World a chance for freedom of speech or religion, nor to gratify a human longing for fame and adventure, not even by a desire to locate a better place for the pursuit of a happier life.

What brought Balboa to the Americas and what kept him and the other Spaniards there was merely an insatiable lust for riches. It was this common cause which brought about his ruin and theirs. Even his search for the South Sea was predicated on the belief that it would afford expanded opportunity for pillage.

By this act of discovery his name was inevitably, and rightly, preserved for posterity but the facts which Mr. Strawn has so competently assembled strip the glamour from Balboa's deeds except for the brief moments when he stood alone glimpsing in the distance his Southern Sea. The sad fact is that Balboa — and the other *conquistadores* — lacked the human kindness and compassion which posterity expects heroic figures to possess even though it may forgive them if they usually keep these qualities concealed.

H. E. L.

Unmasticated Dietetics

EAT, DRINK AND BE HEALTHY, by Clarence W. Lieb, M.D. \$1.50. 167 pages. New York: *The John Day Company*.

OF the plethora of health books on the soul, mind, and body that are thrown at the ingenuous reader these reading days, only a precious few escape a taint of quackery and still fewer achieve the goal of readability. Dr. Lieb, who operates a private laboratory for clinical research in New York City, has written a book that apparently reflects a sound learning in the field of dietetics, but it grossly fails at being readable. If there is wisdom in it, then its presentation is atrocious; from beginning to end there is no sign of careful writing; no coherence, no charm. The author apparently attempted simplicity and instead achieved Babbitt-like puerility. In the language of the late political campaign, there is a crying need for doctors who write carefully and who eschew rushing into print with loose collections of unleavened notes. An amendment against those who practise the latter would indeed be a noble experiment.



The Grab Bag

HERE today and gone tomorrow is the maxim that rules the activities of the Secretary of the Class of 1875. Mr Warren has been doing some traveling during the summer around the United States. In spite of an accident which prevented some of his side trips, he had many amusing adventures. Being mistaken for the Lord Chief Justice of Ireland was one of them, and hearing Hazen Burton, '70, grow reminiscent on Boston in its infancy was another. Mr. Warren is easily one of our most energetic secretaries. — Still looking backward, there is an interesting story about duelling in the notes of the Class of '85. Duelling was a social and sanguinary part of student life in Germany in the Eighties. The Secretary of '85 grows lyrical over trout raising and gentleman farming in Pennsylvania.

It seems to us that we are always bragging about Professor Locke's notes. This time '96 Notes contain the first, and, we believe, the only account of the recent hurricane in the South. In Dominica, British West Indies, the property damage was heavy but fortunately few lives were lost. There are also some fine points on a new automatic stoker in the '96 Notes. — Plans for the Thirtieth Reunion of the Class of '99 are already under way, but what interested us most was just a hint about a '99 architect who has turned play producer. Our curiosity was stirred, and we want to know more about it. We look to the January notes for more complete information. The '99 Notes also contain an amusing account of a trip that features bus-riding in Morocco. A biblical quotation started and ended an account of the horrible results of vacationing without advance information on how to take one wisely. We wondered just a little about the vacations Burt Rickards must have endured before he confided his findings to others over the radio.

A perfect pæan of thanksgiving pours forth from the Secretary of '01.

Dr. Rowe, it seems, is thankful for a number of things. His horizon is rosy. For just a moment it looked as if he was glad that Frederick Clapp had lost a valuable collection of Persian rugs to a band of traveling brigands. Anyway, he was thankful that one of his classmates has just shipped the world's largest order for hooked rugs from the New England Guild to the Saranac Inn. — The Class of 1902 is harvesting a crop of promising football material. — Russia is a progressive nation now, according to the claims of one '05 man. Communism is an increasingly powerful form of government there which is restoring sanity and prosperity to the nation. It may be a far cry from Russian Communism to Bossy Gillis, but we cannot refrain from mentioning that the "bad boy mayor" is using the Newburyport jail as his administrative offices because of an '05 man's actions.

We found lots of interesting news in the 1912 Notes. When the Review Editors put into effect their threat of finding out more about interesting news that is only hinted at, they are going to investigate the story of John Bray, '12, who was mixed up in a South American revolution. That is just the sort of thing that the Secretary of '12 ought to know we would be interested in, and he is making us pretty curious. That same curiosity made us pour over old volumes of *The Review* until we found Alexander Eicher's account of the Irish-French wedding in the November 1918 issue. It was well worth the trouble and we regret that we cannot reprint it in full. A French wedding is far from an affair of prayer and fasting. The second time we heard about the coke chewers of Peru we went straight to Professor Locke. He told us that there is a kind of coke in South America that has the effects of dope when it is chewed.

We believe that the Secretary of '15 has discovered a way to reduce the labor of being a Class Secretary. We repeat the idea, hoping that it may appeal to others. His solution is to have a series of form letters

that may be sent out to classmates at the great crises of their lives. Weddings and babies would be form letters of congratulation, while engagements would be consoling or encouraging as the case seemed to warrant. The possibilities seem endless. — "The Eighteenth Amendment" is off the press, and we consider it a worthy publication. The Class of '18 has reason to be proud of the efforts of F. Alexander Magoun in collecting so much news into such a neat booklet. Ambitious secretaries may find it a model for similar efforts. — We didn't know the game of duck-on-a-rock was dangerous until we read the '25 Notes. Albany's intrepid out-of-doors sport can break toes, as one '25 man can testify.

Africa never impressed us as a very comfortable place. In fact the theme of most African tourists is usually snakes and insects, with elephants and lions coming as a diversion and a pleasure. William Millar, '26, is no exception. His advice to African campers and picnickers is particularly piquant. — John Drisko, '27, gives an account of his continued travels through Europe that reads like old home week at the Institute. Technology men appear in Sweden, Norway, or Germany just to receive mention from his pen. The flying school at Brooks Field seems to be considered stiffer than the Institute, one '28 man seems to think. Technology may now pull itself together and get really difficult without any qualms of conscience.

There has been a big slump in the number of births reported for this issue. Of the total of four, two are girls and two are boys. The Class of '26 leads with two girls to its credit, and the Classes of '18 and '28 have a boy apiece.

Deaths

Further mention of the following men, recently deceased, may be found in the notes of their respective classes:

WALTER K. HARRINGTON, '85.
Died February 10, 1928.

FRANK B. VAN NOSTRAND, '89.
Died July 12, 1928.

FRED FORREST MOORE, '91. Died June 2, 1928. After twenty-five years of service with the Board of Water Supply of New York City, Mr. Moore had retired on March 2, 1928.

CHARLES F. HAMMOND, '91. Died October 12, 1928.

CHARLES E. FOSS, '96. Died October 12, 1928. He was head of the

firm of C. B. Coburn Company in Lowell, wholesale dealers in paint and other supplies, and was a Director of the Old Lowell National Bank and the Traders and Mechanics Insurance Company.

STEWART S. BELL, '96. Died September 23, 1928. At the time of his death he was a salesman with the

Municipal Light Department of Reading, Mass.

EDMUND B. COOPER, '15. Died March 22, 1928.

ALDEN D. WHEELER, JR., '15. Died July 30, 1928. He was with the Goodyear Tire and Rubber Company from graduation until ill health forced him to give up work three years ago.

'73 The annual meeting and dinner of the Class was held on June 5 at the Hotel Bellevue, Boston. At the business meeting the officers elected were: President, Dr. Francis H. Williams, Boston; Vice-President, Philip D. Borden, Fall River, Mass.; Secretary-Treasurer, George M. Tompson, Wakefield, Mass. The executive officers consist of the President, the Secretary, Robert Shailer of New York City, and William T. Leman of Chicago. Letters were received from all those unable to attend. The Dormitory Fund has received from us the sum of \$4,505 to date, with more promised.—GEORGE M. TOMPSON, *Secretary*, 8 Whittemore Terrace, Wakefield, Mass.

'75 On the fifteenth of May the summer tourist tickets went into effect when I took train for Puget Sound, making stops along the way. I returned to Boston the last of October, having been gone over five months. One of my aims was to get in touch with Technology men, with happy and noteworthy results.

Not so in Chicago, where I met with a sad fall, which came near depriving me of the use of my left eye. I was in the hospital eleven days, and on being discharged they said that my vision would come back to normal presently and there was no occasion to worry. This proved to be illusive, for a fortnight later, on arriving in Seattle, I could hardly see with my hurt eye. I was under treatment there for eight weeks, which prevented my going to Vancouver, Victoria, and other side trips where I was expected. It would not have been possible to have played the invalid under more delightful auspices, for Seattle was the coolest place on the map. Only once that we did not sleep under blankets, and friends were on tap for motoring, to my joy. Nowhere are the sight places more appealing than in and near the metropolis of the North Pacific Coast. Although the worse for this accident—for after rounding the seventy-fifth mile post the comeback is never complete—my vision continues on the job and my health is all that could be expected, thank you.

This knock-out sidetracked calling on the Chicago and Milwaukee M. I. T. club Presidents and Secretaries on my way west, as was on my program. In brief, so far as possible my desire was not to be seen for I was not good to look upon, and on returning East, lack of time prevented.

While in Seattle, the College Club was my headquarters where Floyd A. Naramore, '07, President of the Technology Club of Puget Sound, did the agreeable. He is a live wire, architect for the Seattle School Board with a notable personal clientele. Neal E. Tourtellotte, '17, Secretary-Treasurer, reports that there are more than fifty M. I. T. men in that region prospering apace. I hobnobbed with a dozen or more, good to know.

Here is an amusing hap, apropos of the annual Convention of the American Bar Association in Seattle in July, where there were notable guests of honor! Sitting in the lounge of the Olympic Hotel with a group of ladies, a distinguished-looking man suddenly appeared in front of me with outstretched hand, saying, "My Lord, you may recall our meeting in London in May! I am indeed glad to see you on the Pacific Coast." This took me all aheap and my astonishment struck home as he saw his error and remarked, "Ah! I beg your pardon, Sir, but you resemble the Lord Chief Justice of Ireland enough to be a twin brother." For the remainder of their stay and on several motor outings those ladies were pleased to address me as "My Lord!"

Spokane is the home of The Inland Empire Association of the M. I. T. I had a pleasant call on Edward E. Scofield, '19, the Secretary-Treasurer. He fills an important position with the Washington Power Company, the chief dividend-payer of Eastern Washington.

By all odds the thrilling event of the summer was in Minneapolis, an unlooked for glad surprise. When Richard H. Coombs, '19, Secretary of the Technology Association of Minnesota, learned that my class was '75, he said, "You must meet our Mr. Burton who was five years ahead of you." The son answered his telephone call and presently Mr. Burton appeared, a rugged man of eighty, looking twenty years younger. He had slipped away from an important meeting and after greeting me said, "I have to hurry back; but, Mr. Warren, you must be my guest for over Sunday. The train leaves at 5:15 and you are to meet me at the station. Mr. Coombs will explain." The Burton home on Lake Minnetonka is a matchless rest haven, greatly appreciated after three nights on the train from Spokane. Mr. Burton lived in Brookline when the Coolidge grocery store was the only building at Coolidge Corner. In the late Sixties the Athletics of Philadelphia and the Lowells of Boston created

our American game of baseball. Prior to that time each locality played the game differently, sometimes six on a side and again ten or more, with the bases distanced all sorts of ways. Mr. Burton was on the Lowells and tells of the birth of our national game. Charles W. Eliot was his professor in chemistry at Technology before elected President of Harvard, and he told of the first college boat crew a few years before, on which "Charley" Eliot was one and how Harvard won all the races, whereby hangs much of interest. These are but inklings of our talk, mutually enjoyed, more than I can put into words.

In Washington, D. C., A. E. Hanson, '14, rounded up eight Technology good fellows to welcome me at the University Club luncheon, much appreciated. Allen Pope, '07, gave me a card to the Club, which contributed to my agreeable stay of four days there.

Philadelphia was my next stop, where Wilfred Lewis and Webster did the becoming for my comfort. I was sorry that my hours there were so limited.

Looking in on historic Gramercy Park, New York, number seventeen stands vacant, bringing up a crowd of memories. The present Technology Club home in the Fraternities Club Building, Madison Avenue at 38th Street, is a change not altogether liked by some of the old guard. Howsoever, the Club is in a healthy condition, with 789 members and a goodly number to be acted on at the time of my visit. The new President, Richard H. Ranger, '11, of the Radio Corporation of America, is popular, the right man for the upbuilding job, and Fred A. Roarke continues the obliging factotum.

Looking in on New Haven, I was greeted by Pierce, who is always desirous to learn of the '75 boys and Technology doings. He is one of the few ancients still in the harness at seventy-seven, head of the Safe Deposit Department of the Union and New Haven Trust Company, now occupying spacious quarters in a distinctly New England red-brick building, recently completed on Church Street at Elm.

I arrived in Boston opportunely, to attend the 135th Alumni Council dinner and meeting as Hibbard's guest. It was a treat to meet familiar faces and hear the glad tidings of Technology's healthy status. Needless to say, Goodale made me welcome at the Engineers Club and we had much yarn-spinning. He was on

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hand, as usual, at the Council get-together to represent the Montana contingent.

When in New York, the papers told of the damage by storm and wind to the Lawley Boat Company, which occasioned comment. It was good to learn from Hibbard that this was not the fine plant of George Lawley and Son Corporation at Neponset, where he is at the helm. Under his régime, the business thrives apace and all moves serenely.

A paragraph should be given to the new department of Humanics now successfully launched under Professor Gow, for which Nickerson is responsible, for '75 wants it remembered that we claim him equally with '74 and '76. Also a mention of what Dorr is doing should be given here. Although retired, he is in demand as consulting engineer. These and other mentions are of moment but find me too late for this Review.—HENRY L. J. WARREN, *Secretary*, Greenfield Club, Greenfield, Mass.

'85 Alex McKim, who went to Germany last year, is having the time of his life. When he was a student there he was a member of a student fraternity, the Thuringia Chapter, and on his arrival he was heartily greeted by the members of the club who insisted that he take quarters with them. By chance he met one of the older members of the fraternity at a dinner and in recalling the events of student days Herr Wolff showed Alex a scar on his cheek which was given him by an American member in a duel. It transpired that McKim was the American. They were bosom friends during the time spent in the vicinity of Berlin. When he left, the entire chapter in full regalia saw him off. He spent the early part of this summer in Zurich, Switzerland, and later went to Lucerne. As former officer of the famous society he had club privileges with the University Societies of Bern, Basel, and Zurich, where he was called upon to second their duellistic encounters. A sanguinary photograph accompanying his letter shows him as the central figure in a group of students with faces almost completely disguised by court-plaster badges of courage. McKim's address is Credito Italiano, Geneva, Italy. Drop him a line, some of you.

While motoring to New York, the latter part of June, Ed Dewson thought he would drop in on Harrington at Norwalk, Conn. He was much shocked to learn from a daughter that Walter passed away February 10 of this year. He was present at our Fortieth Reunion in good spirits and apparently in good health. Soon after he retired from business, but loafing was irksome to him and he resumed his duties. Harrington was of a retiring disposition, but those closest to him were strong admirers, and he was one of the most loyal members of the Class of '85.

Under the auspicious management of C. Brown, a brilliant assemblage partook of luncheon at the Westminster, June 22, and motored to "Kokocache," Henry

Sweet's estate at Dover, Mass., for an afternoon of golf on his private links and an evening about his hospitable board. Henry is a model host for he invited the whole Class, their friends, and their friends' friends, and if he had been taken literally at his word there would, nevertheless, have been no lack of glorious provender. Among those present were Mr. Sweet in person, Pratt and his friend, Mr. Peabody; Pierce; Brown and his son-in-law, Donald Hood; Copeland and his brother-in-law, Mr. White; Bedlow; Plaisted; Howard Brown, descendant of Charles; Little and his nephew, Royal Little; Steele, Worthington; the reporter for *The Review*; and Bartlett. You have to hand it to him. He came on from New York for an afternoon with good old '85!

Everett Morss, Jr., was married, on September 20, to Miss Anne Wentworth of Milton, Mass. Mr. Morss is a Harvard man of the Class of 1923. His clubs are D. K. E., Hasty Pudding, Delphic, Harvard, Tennis and Racquet, and Eastern Yacht. His bride, a member of the Junior League, had her formal presentation to society in the season of 1924-25.

Two other weddings have significance to the Class. Mrs. Vinton Dahlgren Pierce, daughter-in-law of the late Josiah Pierce, was married to Robert F. Herrick, Jr., of Boston, September 21; and Miss Constance Mumford, daughter of the late Edgar H. Mumford, was married to Mr. Wallace G. Warren of Boston on the same day.

Announcement of the publication of a book by Arthur D. Little, "The Handwriting on the Wall," has just been made by Little, Brown and Company. The book was reviewed in the November issue of *The Review*.—George Nye, city engineer of New Bedford, appeared before the Board of Engineers for Rivers and Harbors in Washington, June 27, to advocate a thirty-foot depth of channel in New Bedford harbor. The channel has a supposed depth of twenty-five feet, but many vessels of greater draft must wait for high tide and incur expensive demurrage. If you need our help, say so, George.

Fred Newell writes that he fell afoul of Bob Richardson somehow, somewhere, and he says that Bob said that he, Bob, had bought a farm near Milford, Penna., where he can raise trout and have the fun of a gentleman farmer. Doesn't that make you sigh? I mean those of you who are lathering in the harness. There sits Bob, smoking his Henry Clay pipe, listening to the neighing of the cows, gazing at his great barns plethoric with new mown eggs and fresh laid hay, and munching the Welsh radishes and horse rabbits freshly plucked from his garden! Magnum Gazabo indeed.

Ed Dewson and our genial Secretary called on our invalid friend, Lyman Sise, in June, and found his plea for sympathy is entirely unwarranted. Ed says, strictly in confidence of course, that Lyman is just stalling for a beauty rest, and Ed knows for he is on the same lay. — I. W. LITCHFIELD, *Secretary*, Hotel Wadsworth, 10 Kenmore Street, Boston, Mass.

'89 Word has been received by the Secretary that our classmate, Crane, is ill in the Friend's Hospital, Frankfort, Philadelphia.

The Secretary has to record the death of Frank B. Van Nostrand, who passed away suddenly on July 12 of this year. — W. H. KILHAM, *Secretary*, 9 Park Street, Boston, Mass.

'91 The Secretary has just been advised of the death of our classmate, Charlie Hammond, at Detroit, on Friday, October 12. No particulars have been received and the only advices were a telegram from his son. The Secretary tried to get further information before sending ahead the subject matter for this number of *The Review*. Some flowers were ordered.

Francis Holmes's daughter, Velesta Louise, was married in August at Plymouth, Mass., to Vernon Mills Hawkins, Jr., also a resident of Plymouth. Following the ceremony a reception was held at the Plymouth Cordage Company Auditorium. They will reside at 30 Warren Avenue, Plymouth. The bride is a graduate of Wellesley and the University of Vermont. — Charles Garrison has a grandson, Robert Lynn Garrison, born on July 18.

Fred Forrest Moore died at his home at Hawthorne, N. Y., on June 2, and was buried at Linwood Cemetery, Weston, Mass. The following account of his life was sent the Secretary by Mrs. Moore: "He was born in Waltham on October 8, 1867. He had more than forty years of experience in engineering, mostly in water supply and hydraulics, starting at the age of fifteen years as assistant to the engineer and surveyor in his home town, engaged upon extensions of the local water supply and the various work peculiar to the only engineering organization in a small town. He was graduated from the Institute with the degree of S.B. in Civil Engineering in 1891. From May, 1890, to May, 1891, he was assistant surveyor, with leave of absence during Institute term, in charge of table party on topographical surveys of light house reservations along the Maine Coast. Upon graduating from the Institute he joined the engineering force of the Boston Waterworks, engaged upon the Sudbury dam and reservoir, including design of gate chamber and other special structures. In January, 1896, the reservoir work was taken over by the Massachusetts Metropolitan Water Board, and Mr. Moore continued in charge of office work of the headquarters field office on design of masonry structures, estimates of quantities for payment, and so on. From October, 1900, to April, 1902, he was assistant engineer in charge of extensive filtration experiments for Springfield, Mass.; constructed plant and conducted experiments on slow sand filtration, under joint general direction of the Massachusetts State Board of Health and a consulting engineer. From April, 1902, to February, 1903, he was draftsman with the Metropolitan Water and Sewerage

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Board of Massachusetts on contract and working drawings for accessory structures of the Wachusett reservoir, principally masonry bridges and other heavy masonry work for relocation of the Central Massachusetts Railroad. From February, 1903, to January, 1904, he was principal assistant engineer in charge of office, including designing and drafting, Aqueduct Department of Burr-Hering-Freeman Commission on additional water supply for the City of New York. From January to March, 1904, he was assistant engineer in charge of drafting for the Northern New Jersey Flood Commission, engaged on investigation having to do with flood conditions in the Passaic and tributary river valleys. From April, 1904, to September, 1905, he was office engineer to the Committee of Twenty, National Board of Fire Underwriters, in charge of preparation of reports on the conflagration hazard of principal cities of the United States; September, 1905, to April, 1906, hydraulic engineer to the Committee of Twenty with duties increased to include charge of the whole engineering organization.

"In April, 1906, he joined the engineering force of the Board of Water Supply of New York City, as designing engineer in charge, under a department engineer, of designs for cut-and-cover aqueduct, dams and reservoirs, including landscape work. Later work covered steel pipe siphons, distribution lines, and sewage disposal works.

"Mr. Moore was elected a member of the American Society of Civil Engineers on February 12, 1907; was a member also of the Municipal Engineers of the City of New York, New England Waterworks Association, Alpha Lodge A. F. & A. M., Arkwright Club, Nanahagan Golf Club, and other engineering and scientific societies. He was married on October 5 1896, to Winifred T. Wright. Mr. Moore retired on March 2, 1928, after twenty-five years of service with the Board of Water Supply." Fred was always interested in class affairs and attended several of our reunions, as well as class dinners in New York. I know that we all send our sincerest sympathy to Mrs. Moore. — HENRY A. FISKE, *Secretary*, Grinnell Company, 260 West Exchange Street, Providence, R. I.

'95 No notes have been received by The Review Editors from the Secretary of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to LUTHER K. YODER, *Secretary*, Chandler Machine Company, Ayer, Mass.

'96 With classmates scattered all over the world, it is natural that good fortunes and bad fortunes should be falling to our lots. The September hurricane which came across the Caribbean and swept into Florida hit our classmate, Andrew H.

Green, who has for years been located at Canefield, Dominica, British West Indies. Here he had established an extensive lime plantation and factory for extracting lime juice. He was very close to the center of the storm; but at his location there was only one fatality, a man drowned from a motor boat, whereas only seventy-five miles north at Point à Pitre the town was wiped out with over one thousand deaths. However, it was bad enough at Dominica. The sea was about the roughest that had ever been known, and it continued violent for a day or more with the result that sea walls and jetties were washed away and the boulevard along the shore was damaged to such an extent that its repair will be a long and expensive job. This sea was the cause of many wrecks of small boats; but, fortunately, without a serious loss of life. Trees and crops were badly damaged. In Green's case, the number of trees destroyed was perhaps 2,000; and, allowing an estimate of twenty-five dollars per tree, this makes a considerable monetary loss. However, Green is looking at the matter philosophically and says that a lot of his trees were diseased anyway, having been attacked by red root, so that they would have had to be replaced before long with other more resistant varieties. Fortunately, Green had made use of his engineering experience; and had had the wisdom to look ahead and construct his buildings of reinforced concrete so that his buildings went through the storm without damage, whereas other buildings of light, flimsy construction were blown down. He is taking immediate steps to clear up the debris, replant his orchards, and resume operations. In fact, a hurricane in those regions is to be looked for periodically and plans and operations are largely governed by this fact. Last year Green was away on a European trip at this time, but this year he happened to be at home, and it would seem as if the rehabilitation of his plantation would prevent another European trip in the immediate future.

Jumping now to the other hemisphere, word has come indirectly from A. H. Grabau who is Professor of Geology at Yen Chieng University at Peking, China. Dr. Vincent of that institution is spending a year of special study at Technology, and reports that Grabau is beloved by the staff of the university and is looked upon more or less as an unofficial dean of the Americans. Unfortunately, his health is none too good, and he is badly crippled by rheumatism, but mentally he is as keen and alert as ever; and his colleagues all aid him in every way to get around in spite of his condition.

Billy Anderson reports that he plans to sail on January 7 with Mrs. Anderson and the boy for another trip around the world, which will consume four or five months. Apparently his trip two years ago caused him to realize that there were a lot of things that he could not then see so that he feels obliged to go again. This note is intended particularly for Paul Johnson, '98, so that if he should be on the same boat as Anderson, which hap-

pened two years ago, he will not wait until after he gets home to find out that Anderson was a '96 man at Technology. — Jacobs attended the geological Field Day of the New England Geologists around Boston on October 12 and 13, but unfortunately, the Secretary missed seeing him. He reports that he had a bully trip along the coast; and also that during the early summer he first made a trip of 3,400 miles in the South, getting as far afield as Chattanooga and Atlanta in making a special study of the geology of the region. Later on in the summer, he and his family made a fishing and camping trip to Lake Dunmore in Vermont, and during the latter part of the summer he was engaged in studying the results of the Vermont spring flood for the purpose of preparing an article on flood erosion and its consequences.

Harry Brown sent a postcard from Washington early in September reporting that he was spending two weeks in that city; and, incidentally, had seen Charlie Morris and George Burgess and found them both in fine fettle. This report has been confirmed by Morris with the authoritative statement that Harry was actually in Washington, but to date no information has become available regarding the purpose of his visit. The presumption is that it had to do with politics, but whether Harry was making an anonymous contribution to the Smith or Hoover funds, or whether he was there to be delegated as an under-cover agent for one of the political parties is not clear.

Con Young, after spending a quiet week with Buster Crosby's family in Osterville early in October and enjoying a game or two of golf, returned with Mrs. Young to Washington where he was clearing up things preparatory to sailing on the new Italian motor ship *Augustus* from New York on November 24 at 1 A.M. The pier is number 96.97 at West 57th Street in case any one wants to see them off at that hour. Their plans are to go to Sicily, Northern Africa, and Egypt for the winter, returning to Italy late in March; then making a trip through Germany, France, Switzerland, and Spain in April and May, and returning home in June. In Spain he plans to visit the plants and cork baling stations of the Armstrong Cork Company. They have bought a sizable lot on Bass River at South Yarmouth, Mass., and it is their plan to make their headquarters there next summer while they are carrying out their ideas of building a comfortable Cape Cod style cottage. Incidentally, Con is oiling up the voice somewhat with his old teacher and may do a little broadcasting of opera with Miss Harper on station WNAL before he sails. Every one will wish Con and Mrs. Young *bon voyage* with the sincere hope that he may return next June fully restored in health. Having given up his house and office in Washington, the only address for reaching him during the winter will be in care of The Arts Club, 2017 Eye Street, N. W., Washington, D. C., or in care of the office of Thomas Cook and Sons in Naples, Italy.

1896 Continued

Mort Tuttle's company has charge of the design and construction of the new buildings of the American Tel. and Tel. Company near Lawrenceville, N. J., for transoceanic telephone communication. This development comprises an area one mile square on which will be two buildings of special design, practically identical, each housing radio transmission machinery, shops, and administration quarters. The antenna will be of elaborate design carried on nineteen steel towers 185 feet high and set 250 feet apart. It will be 4,500 feet long, constructed in three units for short wave transmission to London. Later on it is expected to use this equipment for other telephone extensions, including a circuit to South America. The plant is expected to be in operation in the late spring of 1929.

Joe Harrington has written a characteristic report which is a splendid example for some of the other fellows to go and do likewise. It would only lose force by transcription so it is reported verbatim: "If any of the boys feel that a bit of information from me would be of interest, just tell them that everything is about as near 100 per cent as we could expect. Joseph, Jr., is just entering his third year at Massachusetts Institute of Technology, a school having an excellent reputation, especially its mining and metallurgical department. I understand that Joseph, Jr., is making a first class record, which would not generally be expected by any one having any recollection of his father. The First National Bank of Riverside is flourishing, and we now have assets of close to \$1,000,000.00, which isn't so bad when you consider that the President is a mechanical engineer. Making money is not exactly a mechanical process — at least, I don't make mine that way. The Joseph Harrington Company has just put on the market a most successful line of fully automatic but small mechanical stokers suited to fire box boilers of the all-steel or sectional cast iron types. This is proving unusually satisfactory from the smoke elimination standpoint, and the line is moving fast. Another thing which might interest you as a metallurgical sharp is that I have developed a fully automatic stoker which is virtually a continuous gas producer, providing a flame which is twenty or thirty feet long, of low temperatures, and of absolutely neutral characteristics. In other words, the CO₂ will run around 17 per cent with only a slight trace of free oxygen or CO. This makes it particularly suitable for annealing purposes, lime burning, heat treatment, and many other forms of low temperature processes. I hope this letter finds you in fine health and everything going along nicely in your department."

Incidentally Joe's boy is general manager of the production entitled "The Show Off," which is to be given by the Drama Shop at Technology. The entire work of administration, acting, and scene painting and shifting is done by the students. Another son of '96 who gets his name in *The Tech* is Louis S. Morse, Jr., of the Class of 1931, who is a member of

the sophomore committee to look after the enforcement of the new rules for freshmen.

Report has been received of the death of Charlie Foss which occurred rather suddenly on October 12, although he had not been in the best of health for several weeks, but was believed to be on his way to recovery. Foss took the chemical course at Technology. He was born in Scarborough, Maine, fifty-five years ago, the son of Ether S. and Caroline M. (Milliken) Foss, and was educated in the Lowell public schools. After leaving Technology in the year 1894 he established himself in business in Lowell as a contractor and builder, but in 1901 he entered the employ of the Massachusetts Electric Railway Company. Nine years later he became assistant general manager in the firm of C. B. Coburn Company, wholesale dealers in paint and other supplies. He was made general manager and active head of the firm in 1918. He was a director of the Old Lowell National Bank and the Traders and Mechanics Insurance Company. Mr. Foss was a communicant of All Souls Church. He was a member of Kilwinning Lodge, A. F. and A. M.; Mt. Horeb Royal Arch Chapter, Ahasuerus Council, R. and S. M.; the Yorick Club; the Vesper Country Club; the University Club of Boston; the Nashua Country Club; and the Middlesex Club of Boston. His widow, Bertha W. Foss, whom he married on June 5, 1923; and two children, Shirley and Charles B. Coburn; and eight sisters survive him.

Funeral services were held at his home on October 15, and were marked by the presence of scores of persons intimately connected with him in business. The local paper stated that the sudden death of Mr. Foss came as a shock to scores of his friends and acquaintances. He had been actively and prominently connected with the business life of the city for several years and under his leadership and direction the C. B. Coburn Company had taken first rank among business houses of that kind in New England.

The following is abstracted from the Reading, Mass., paper of September 28: "It is with great regret that news of the sudden death of Stewart S. Bell of 80 Woburn Street, an outstanding citizen of Reading, was received on Sunday. He was 54 years of age. Mr. Bell was a victim of heart trouble. He had enjoyed excellent health until just before dinner time Sunday when he complained of a pressure on his chest which he attributed to indigestion. After dinner it was a bit worse, and he went to lie down on a couch where he passed away within a few minutes.

"Stewart Sargent Bell was born in the section of Andover now known as Shawshen Village on July 15, 1874, the son of Charles Henry and Christine Bell. He attended the public schools and also the Institute. He came to Reading about thirty years ago and became superintendent of the Municipal Light Department, which position he held several years. Later he became connected with the Westinghouse Electric Company as a

salesman and then with the Maloney Transformer Company, also as a salesman, holding the latter position for four years. A year ago last spring he again became connected with the local Municipal Light Department as a salesman, which position he held at the time of his death.

"Mr. Bell married Lucy Mary Carleton in Reading on October 2, twenty-eight years ago. He is survived by his widow, one daughter, Lucy Katherine MacLeod of Reading, and three grandchildren, Herbert Willis, Jr., Lucy Jean and Stewart Sargent MacLeod. Mr. Bell was a member of Good Samaritan Lodge, A. F. and A. M., and the Essex County Electrical Club. He was for many years a member of the Meadow Brook Golf Club. The deceased was a man of unswerving character, devoted to his home and family and a citizen of high standing. He leaves a wide circle of friends and business associates, who feelingly mourn his passing. There was a large gathering of friends, relatives and business associates at the funeral services. Elmer H. Robinson was one of the pall bearers." — CHARLES E. LOCKE, *Secretary*, Room 8-109, M. I. T., Cambridge A, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

'97 No notes have been received by The Review Editors from the Secretaries of this Class for inclusion in the December issue. The Secretaries received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to JOHN A. COLLINS, Jr., *Secretary*, 20 Quincy Street, Lawrence, Mass., or to CHARLES W. BRADLEE, *Acting Secretary*, 261 Franklin Street, Boston, Mass.

'99 This month your Secretary was compelled to follow the example of that illustrious leader who was forced to go to the mountain because the mountain would not go to him. History has it that Mohammed commanded the mountain to come to him, but with negative results. Your Secretary would not command you to send in news — the results would probably be negative if he did — still the column remains to be filled. The escutcheon of '99 must not be marred by failure, so, perforce, your Secretary went where the news is centered. In other words, on October 17, he went to Boston, via Cambridge, where he attended a meeting of the Advisory Committee of the Department of Mining and Metallurgy at Technology.

When the Advisory Committee had finished its meditations and determined the course of knowledge for the coming year in the particular Department mentioned, your Secretary shed his educational responsibilities and repaired to the University Club, Boston, where Arthur Brown had made arrangements for a class dinner to which all members of the Class of '99 in the vicinity had been

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invited. Fifteen men foregathered, dined well, and reminisced and reviewed each other's and their own personal affairs, accomplishments, accidents, and amusements. Finally the conversation narrowed down to the Thirtieth Reunion. After a full discussion of time, place, ways and means, two committees on arrangements were appointed, one for Boston and one for New York. The personnel of these committees will appear in the next issue of *The Review*, as your Secretary has qualms about publishing names of appointees before they have been notified of the honor conferred upon them. Charles Corbett of Boston will be in charge of publicity, and we all know what that means. More power to him!

The dinner at the University Club was a complete success owing to Arthur Brown's kindly consideration and activity. We ought to get together oftener. Throughout the mirth and jollity, however, your Secretary's mind was obsessed with the necessity of digging up some news. News gathering is not his forte, and, although the results were not voluminous, still they are interesting, and somewhere we have heard that it is quality not quantity that counts. If that be true, there can be no fault finding for certainly the following news is interesting.

Tom Robinson, architect and purveyor of mirth, had to send his regrets to the dinner, as he had to go to New York on business connected with a play he is producing. This is news of a high order and we might have known nothing about it. We missed Tom but we rejoice in his good fortune and hope to see his play soon. — H. P. Farnham, heretofore a stranger, came to the dinner because he had received so many notices. It is profoundly hoped that he will come again and soon, and bring others with him. Harry Morse has been made assistant to the Vice-President of the State Street Trust Company, Boston, and is thoroughly enjoying his work. Ben Hinkley has recovered from that serious automobile accident that laid him low last March. F. W. Caldwell is now a consulting engineer in Montreal, Canada, and his address is 17 Marlowe Avenue. He will be glad to see any friends who travel that way.

Letters from classmates abroad make interesting reading. Lewis Emery wrote as follows from Baden Baden: "I am more than pleased that plans for the Thirtieth Reunion are materializing. I shall be there if I am on earth. The Twenty-Fifth was to me a howling success, and I am looking forward to the next one with keen interest. We sailed from New York on June 26 and landed in Lisbon. We went to Oporto and started a thousand-mile motor trip through the Galicia and Asturia districts of Spain, passing through Santiago de Compostella, Lugo, Oviedo, Santanda, and ending up at San Sebastian. After a few days in Biarritz, which is just across the Spanish border from San Sebastian, we went to Marseille and embarked on a French boat for Casablanca, Morocco. It was a great trip.

The orientals are a never-ending diversion. The bus system in northern Morocco is quite extensive and what a sight the busses are laden with men and women all done up in myriads of flowing white garments! They never seem to discard a single one even though the temperature climbs to 110 or 117. Back then to Marseille and on to Geneva and Freiburg where we were found by a German friend from Berlin, and away we went in a car for four days over hill and dale in the wonderful Black Forest, land of hikers and cookoo clocks. On to Baden Baden for a rest and time to write this letter to you. We go from here to Berlin, Paris, London — sailing for home on September 8. You brought this on yourself."

William H. Kinsman, Newburyport, announces that he too has been to Europe, which was his reason for not answering my "appeal" for news earlier. "It was not a business trip but one for pleasure — a little sightseeing, a little motoring, and some golf. Two couples make a very good team, and where the men do not feel like sightseeing there is always a good golf course handy."

Speaking of golf courses — while I was waiting on the Edgartown Golf Course on Martha's Vineyard for a thunderstorm to do its worst and pass on one day this summer, who should I find as my companion in misery but F. M. Blake of Hartford, Conn. He is in the insurance business and spends his vacations on Martha's Vineyard at Edgartown. Blake said he had not read our class news as he did not subscribe regularly to *The Review*, and I told him he was missing something.

Burt Rickards, who is with the Department of Health at Albany, N. Y., keeps me stepping. Burt must have his little joke, and he has it on me. However, he is a sympathetic soul. His heartstrings were touched by my "implore and beseeching" letter of August 9. So touched was he that he could not even wait to dictate, but his tender-heartedness did not prevent him from the following: "Not being as famous, or shall I say as notorious, as some I can't give much in the way of news — not even as much as they did about you when some one pried the bushel off of your candle. You probably don't know what that reference means but if you start at Genesis and read through to Revelations you'll find it somewhere!"

We had some interesting correspondence about the bushel and the candle and the light and the reference which space and the editorial blue pencil forbids me to publish. I shall now pry the bushel off of Burt's candle. On July 21, by invitation of Professor Prescott, he lectured at Technology on "Methods in Public Health Education." On August 10, if any of you happened to have been listening in on Station WSY you would have heard him broadcast "A Midsummer's Day Dream." The poor Bard of Avon may have shuddered if the radio waves penetrated to his present abode, but "A Midsummer's Day Dream" is an

excellent and timely warning to vacationers. Mr. and Mrs. Urbanite, city people, plan to get the most out of their vacation and establish themselves with son Johnnie and daughter Susie at a tavern in the Adirondacks. Mr. and Mrs. Urbanite spend the entire first day on the golf course while Johnnie is rescued from drowning just in the nick of time, and Susie gathers perfidious poison ivy for decorations in her room. On the following day Mr. and Mrs. Urbanite were confined to their beds. They would have liked to lie still in order to rest muscles which had had an overdose of exercise after months of comparative disuse, but necks and arms blistered from sunburn made lying quiet anything but a pleasure. Burt's talk was excellent — I hope all vacationists heard it — and he closed his remarks with the admonition "to indulge in vacation activities moderately and wisely until the body has become accustomed to changed conditions. Otherwise the day dreams conjured during the other fifty weeks of the year may turn out to be nightmares." That ought to hold Burt for a while and I shall finish by quoting his own reference, Matthew v: 15, "Neither do men light a candle and put it under a bushel, but on a candlestick and it giveth light unto all that are in the house."

Miles Sherrill will lecture at Harvard this year, in place of Dr. Richards. He will lecture also at Technology. — Albert Nathan contributes the following: "Having the same dog, daughter, and wife, I cannot meet your urge for personal affairs. I opened my camp at the advent of summer in March and will close it when and if it stops raining; which perforce will be when it snows. Finished the bungalow on the summit; pulled about a thousand stumps; terraced and planted fifty grape vines; and cleared several acres for gardens. Daughter has had lots of callers; all polite but one. The polite ones I introduced to work and none came again. A certain athletic one wouldn't work and has survived for a marriage in October."

Clancey Lewis writes from Seattle that he has turned off 2,444 miles on his Chrysler during July visiting factories in the four corners of the little State of Washington and he finds conditions satisfactory. He was too busy managing the first state-wide display of the products of the 1,192 food factories of the State of Washington, at the three principal fairs at Spokane, Yakima, and Puyallup to write many details. He was to attend the Pacific Coast Foreign Trade Convention at Los Angeles on September 18, 19, and 20. He had an article in the Northwestern Golfer and Country Club for June in which he went into detail about the perfidious, treacherous "back swing." He says proper speed can only be obtained by insistent, persistent, and consistent practice, and perhaps the golfing fraternity will eventually be provided with a "golfoscope" to measure it. Of the improving of golf there is no end.

I am always pleased, and I know the rest of the Class is also, when some one

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responds to the appeal for news, from whom we have not heard. Jerome P. Jackson is the little fairy in this instance. He opened his letter to me with the statement that we were strangers, but continued that it was his own fault because he had never answered one of my urgent "appeals" before. Jerome is an architect and he lived in Minnesota. He had his own problems when he came out of the army after the World War. However, he is now associated with Mr. Roger H. Bullard at 607 Fifth Avenue, New York. His oldest son is going to be an architect and has already spent one year at Technology. Jerome cannot promise to be present at the Thirtieth Reunion, but he expects to be present at the festivities and renew old acquaintances and make a few new ones.

Frederick W. Grover writes from Schenectady: "I am still at Union College where I have been for eight years, teaching electrical engineering. This coming school year I shall give a course on astronomy at the college, to help in an emergency caused by the death of one of the professors. For some years I have acted as consulting physicist for the Bureau of Standards, principally in the field of inductance and capacity. In between these activities, my wife and I find time to do a good deal of motoring. We have been to Canada and Vermont this summer and are planning more travel." — W. M. CORSE, *Secretary*, 810 18th Street, Washington, D. C. A. H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

'00 No notes have been received by The Review Editors from the Secretary of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to GEORGE E. RUSSELL, *Secretary*, Room 1-272, M. I. T., Cambridge, Mass.

'01 Thanksgiving is at hand and as one of New England birth and breeding its approach yields to a certain amount of thought and introspection. A modest reticence precludes my offering you a recounting of personal benefits, but a few words may properly be said concerning those of the great Class of 1901.

First, it should be a matter of thanksgiving with us all that through the generosity of one of our number, one of the few dormitories now erected is dedicated in the class name. Secondly, there is some measure of thankfulness in that a steadily increasing number of class members remember Wally Walcott sufficiently to pay a tribute to his memory. The fund is still small, but it is growing and I have definite hopes of the future.

And I think we may be thankful that neither of the presidential candidates are members of the Class. With the lack of enthusiasm that seems to predominate in the political situation, were things other-

wise some member of the Class might be constrained by loyalty to vote for a candidate whom he otherwise would not support. As it is, we are all free to exercise the suffrage without hampering conditions.

Most of us are still alive. Far be it from me to infer that any member of the Class is moribund because he fails to furnish me with interesting news regarding himself or any other '01 man. I do not even regard his failure to pay class dues as an evidence of approaching demise, or, for that matter, of moral turpitude. Let me pause to say, however, that I am not indifferent to the response to my appeal for the wherewithal to provide for our modest overhead.

Then I think we should be thankful, and most of us are, that we derive from Technology. With all of its shortcomings — and what institution is without them? — with all of the stern asperities which characterize the student years, with due recognition of the individual drawbacks which influenced personal relations with certain members of the faculty, and with yet other red ink items, we did enjoy many benefits and do enjoy them still. The balance is on the right side, and we may well take pride in our association with an institution whose place in our community is assured, whose standards are high, whose ideals are worthy, and whose fair reputation persists. All in all, there is much to be thankful for.

That spoiled child of fortune, Fred Clapp, has left Persia. With just recognition of his incorrigible wandering habits he has assembled his family in France. Those visiting Paris during the next few months will find him at No. 68 Quai d'Auteuil, Paris XVI. At least his family will be there. The following reaches me from official sources connected with the Persian government: "Frederick G. Clapp recently completed his engagement with the Imperial Government of Persia and has returned as far as Paris. During the journey homeward across the Syrian desert, Clapp had an encounter with a band of brigands who fired on the automobile in which he was traveling, captured several other automobiles, and got away with all of Clapp's collection of Persian rugs, which they carried to the center of the Arabian desert. At last accounts, they were being searched for there by Syrian and Transjordanian aeroplanes and Iraqi police. Since arriving in Paris, Clapp has been at work preparing reports and plans for certain new explorations."

Freddy Freeman has been located in Portland, Maine, for a number of years, and in addition to operating one of the mills in that neighborhood, he has recently developed a new industry which has been organized under the title of the New England Guild. This latter designs and manufactures hooked rugs, a form of domestic ornament that many years ago played an important part in every well ordered household. With the growing interest in antiques and in the culture which they represented, the hooked rug is again entering on an era of popularity.

The following is culled from a Metropolitan paper: "What New York brokers say is the largest single order for hooked rugs ever sold in the United States, or probably in the world, is being shipped today by the New England Guild, Inc. This shipment consists of seventy-five bales of hooked rugs, or 10,200 square feet, numbering 200 different rugs. The shipment is being sent to Saranac Inn in the Adirondack Mountains, and the rugs will be used in furnishing that hotel. Recently the New England Guild had the distinction of making the largest single hooked rug ever made in the world."

Until recently, Bill Pepperell held the class record for residences, although P. W. Moore, Esq., would from time to time emerge from the chaste seclusion of his Private Road to enjoy the equally selective isolation of his private ranch in Wyoming, his private fish preserve in Vermont, and the one or two other fortunate (and private) habitations that have come under his control.

Ralph Whitman, who is now Commander in the United States Navy, with headquarters at the Norfolk Navy Yard, Portsmouth, Va., is in his capacity as public works officer also domiciled in the U. S. Naval Hospital, Norfolk, Va., Naval Ammunition Depot at St. Juliens Creek, Va., and the Radio Naval Compass stations at Virginia Beach, Va., Poyners Hill, Cape Hatteras, and Cape Lookout, N. C., and thus wins the gold watch and chain. I give a summary of his activities in his own words: "As public works officer of the Navy Yard, I am city engineer, city architect, sanitary engineer, and head janitor of a \$30,000,000 industrial plant with outlying smaller units to fill in the chinks of unoccupied time. I have quarters in the Navy Yard, spend about nine hours a day in my office or around the yard, sleep eight hours, and spend the balance of the day with my family and friends. I have been at this station three years and am due for a move at any time. Until then, if any classmates are in Norfolk with the time to spare and the necessary inclination, I would be glad to show them a good navy yard."

Frank Cady writes in from Nela Park, where he has been for many years, that he has just been reelected President of the Special Libraries Association, a national body in which he has long been active. Frank is one of the few real literary fellows in the Class. He has just issued a revised edition of his book on Illuminating Engineering, written in collaboration with Dates, which is known to many of you. He has also rewritten the section on illuminating engineering in the general handbook on Mechanical Engineering edited by Marks.

Ralph Stearns is still in New York and is engaged in hydraulic engineering as a consultant for a public utility corporation. His office is at 50 Church Street. He says with regret that he has not been able to effect many contacts with classmates but hopes to do so before long. — ALLAN WINTER ROWE, *Secretary*, 4 New-

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bury Street, Boston, Mass. V. FRANK HOLMES, *Assistant Secretary*, 250 Stuart Street, Boston, Mass.

'02 Class Notes, like gardens, do not grow luxuriantly in the fall of the year. Arthur More took a long vacation trip last summer to the Northwest and Alaska. Arthur reports it is the first real vacation he has had for many years. — Freddy Allyn was in Boston last week having timed a business trip to New York so as to return via Boston and take in the Harvard-Dartmouth game. The Class Secretary ran into Freddy on Bromfield Street, Boston, with his tall son Horace who is a student at Dartmouth. — Greely's son, Dana, is on the Harvard football squad this fall and has played as a substitute quarterback in some of the games. — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

'03 No notes have been received by The Review Editors from the Secretaries of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass., or to JAMES A. CUSHMAN, *Assistant Secretary*, 35 Harvard Street, Worcester, Mass.

'05 Sam Shapira, of whom we had not heard for years, gives us an interesting account of at least three months of his recent life. He writes: "I left New York, on January 14, for Kharkov, Russia (now called U. S. S. R., or United Socialist Soviet Republic— and reached there January 27, a rather fast journey for such a long distance. Kharkov is the capital city of Ukraine — one of the largest and richest states in Russia. The purpose of my visit was to examine and report on two iron ore mines situated in the Krivoi-Rog district located 200 miles south of Kharkov and about the same distance north from the Black Sea. This work was done for a firm of New York consulting engineers and for the Southern Ore Trust of Russia, a department of the Soviet government. We made a detailed report on the physical condition of the mines and advised and made recommendations to conform with our best American practise.

"Twelve days were spent at the mines and about two and one-half months at our office in Kharkov. Our report was gone over by the Technical Council and approved and accepted by them. They in turn submit this report to the Supreme Economic Council in Moscow for further consideration and for the appropriating of necessary funds to carry out the recommendations made. We expect to have a contract covering a period of three years — to carry out the necessary consulting engineering services

and I may be back there in another sixty days. It was a wonderful experience.

"The Russian engineers and mine officials, with whom we were in contact, are very intelligent technical men and did everything in their power to assist us in our work. They like the American engineers and are exceedingly anxious to install American mining methods and machinery. Commissions of Russian engineers are frequently sent to this country to study mines, methods, machinery, manufacturing, and so on, and always return to their country with a better understanding of what we have done and are doing in this country.

"Kharkov is a city of 500,000 population and is greater in area than Boston. The housing facilities are inadequate for this large number of people and many families have to live in small quarters. This condition is rapidly being bettered by a large building campaign — a great number of modern reinforced concrete apartment houses are being built and these will be modern in every respect. We lived in one of these new apartment buildings and had all the comforts we find here at home. The food is excellent and city transportation, such as auto-busses, trolley cars, and taxis, is equal to ours.

"All business and industry has been nationalized in Russia and since the communists, who control the country, are hard workers and good leaders, progress is slowly, but surely, being made and ten years after the Revolution the Communists are still in power, stronger than ever, and have accomplished many things which were thought impossible by other countries. There were all signs of a stable government and all Russians seem satisfied with their progress and the freedom and responsibility which is now theirs is held sacred and is the balance wheel which will keep them in the path of constant improvement. The Communists have fought their revolutions and have given their lives for their ideals and the fruits of their victories they will not easily give up — or allow to be forgotten. Russia is exceedingly rich in natural resources and some day will be the great country which by all signs it deserves to be."

Walter Eichler writes from 86 Winter Street, Keene, N. H.: "I am working for the Faulkner and Colony Manufacturing Company as power and maintenance engineer. The only out is that I have to work fifty-four hours a week and holidays are not always observed in New Hampshire. Keene is a nice place and there are several beautiful lakes in which I spent my evenings during the hot weather. We have a delightful nine-hole golf course at the Keene Country Club with plenty of water hazards to increase one's vocabulary. Andy Fisher was up to see me for a half hour about three weeks ago but I couldn't tempt him to spend the night here."

The Hygrade Lamp Company of Salem, of which Ed Poor is President, has recently acquired the Vosburgh Miniature Lamp Company of Orange,

N. J., and become the manufacturer of 5,000,000 automobile lamps a year. Last January it purchased the Triumph Lamp Company of Indianapolis. The Hygrade production is now increased to 17,000,000 incandescent lamps a year, making it the largest independent licensed manufacturer of incandescent lamps in the United States.

Charlie Boggs was chairman of the Publicity Committee of the American Chemical Society meeting in September at the New Ocean House, Swampscott. Doc Lewis was a member of the Reception Committee. — Lane Schofield, who has had a phoney address in West Virginia for several years, has been finally traced to 71 South Portage Path, Akron, Ohio. — Roy Allen is reported in Freehold, N. J. No details. — According to the A. S. M. E. News, Jack Flynn has become associated with General Electric, S. A., Peru and Victoria, Buenos Aires, Republic of Argentina. — A new national bank has been organized in Newton. Grove Marcy and Harry Wentworth are directors, the former representing Newton Highlands and the latter Auburndale. — A couple of years ago Edgar Meyer moved from Bermuda to California and that's all we know about that. Too bad he didn't stick around a bit longer so the Secretary could make him an official call. — R. D. Gatewood's name appears pretty regularly in the shipping news so we keep an eye on that column. Recently he received bids for the reconditioning of the *Mt. Vernon* and *Agamemnon*, German ships that have lain idle for close to ten years. The former, if we recall correctly, was the ship that sailed for Bremen a day or two before war was declared and made port in Bar Harbor.

There is no doubt in our mind but that if we had a chance to read all the principal papers of the country or subscribed to an extraordinarily good clipping bureau, there would be a lot more class news available. But occasionally we get hold of an alien sheet that helps out. A Boston *Herald* came our way with the news that Ed Coffin and his associates had convicted Mayor Bossy Gillis of Newburyport and had him in the jug, ending that chapter. As for Ed, who had been convicted of reckless driving at his honor's instance, he is out under a suspended sentence but retains his driver's license. But it will cost him \$50 if he is careless again. — ROSWELL DAVIS, *Secretary*, Wes. Station, Middletown, Conn. S. T. STRICKLAND, *Assistant Secretary*, 20 Newbury Street, Boston, Mass.

'07 James M. (Jim) Barker, who for the past eight years has been located in Buenos Aires, S. A., as manager of the local branch of the First National Bank of Boston, has resigned from this connection and has accepted an offer which came to him from Sears, Roebuck Company, assuming a very important executive position. For the present, Jim expects to be located in Philadelphia. — Sam Coupal, under date of October 16, wrote from the Arizona-Eastern Gold Mines Company, Octave,

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Ariz., that by November 1 they expected to be milling fifty tons a day and to be on a permanent, profitable basis.

Frank MacGregor, in his typically thoughtful way, wrote us on October 19: "Thanks to your '07 notes in *The Review*, I have renewed an old acquaintance of Technology days. Ernest F. Lewis, IV, read the notes and found I was located a few blocks down Park Avenue from his office, so he looked me up. He is an architect here. I have had quite a series of accidental meetings with 1907 men recently. I ran into Bachmann in the station at Buffalo one evening; then a few days later I saw Allen Pope on a Washington train. I met Moses and his wife at the Mount Washington Hotel at Bretton Woods, N. H. Both of us were on a motor trip. Then, a couple of days ago, I ran into Octavius Peabody at the Hotel Commodore in one of the dining rooms. How's that for a collection of a few weeks!"

We are indebted to Professor Locke of the Institute for the following: "A. L. Wiggin, '07, who is in charge of the Great Falls, Mont., plant of the Anaconda Copper Company, is feeling very proud of the fact that his zinc electrolytic team No. 3 won the world's championship in the International First Aid Contest at Butte in September. This team returned from the contest with the international championship banner and also several cups as trophies." — BRYANT NICHOLS, *Secretary*, 2 Rowe Street, Auburndale, Mass. HAROLD S. WONSON, *Assistant Secretary*, Int. Shoe Company, Manchester, N. H.

'09 P. H. Chase, formerly transmission and distribution engineer of the Philadelphia Electric Company, has been appointed chief engineer in charge of electrical engineering, mechanical engineering, engineering analysis and reports, system planning, and standardization and drafting. — Max Weill, who has been Vice-President of the Beech-Nut Foil Company, has recently resigned his position, and has sailed for Italy for several months stay in Europe with his family.

Paul Wiswall writes: "One of my new duties, now that I am at the general Postum offices in New York, is looking after salad oil for Hellmann's mayonnaise. The other day I went down to see Harry Trevethick who worked alongside me in the laboratories in Walker. Harry was just getting the final details arranged for a meeting of the Oil Chemical Society of which he is a past president. The Society is meeting in New York, October 25 and 26. Harry has a very interesting avocation. Out where he lives on Long Island at Rockville Center, he is choir-master in one of the churches." We have just heard that he was a recent speaker before the Association of Consulting Chemists and Chemical Engineers. — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, *Assistant Secretary*, Postum Company, 250 Park Avenue, New York, N. Y.

'10 No notes have been received by *The Review* Editors from the Secretary of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in *The Review* Office. Members of the Class having news or inquiries should address them to DUDLEY CLAPP, *Secretary*, 16 Martin Street, Cambridge, Mass.

'11 It certainly is thrilling to be back in the field of engineering and business activity, although since I have been away from the Institute and with the Lamson Company in Syracuse, N. Y., class mail has dropped off so that you all must be reminded of the omnipresent importance of our slogan: Write to Dennie!

I have run across Jim Campbell, I, several times in New York; also Dick Ranger, VIII. Jim's firm of Eadie, Freund and Campbell, consulting engineers, is making excellent progress; while Dick, in addition to his engineering duties with the Radio Corporation of America, is busily and effectively functioning now as President of The Technology Club of New York. You classmates who are in New York from time to time should make it a point to lunch at the new and attractive club headquarters at 22 East 38th Street.

Not so long ago I had a delightful renewal of acquaintance with Lester Cushman, IV, and his wife, meeting them at the Hotel Commodore, New York. Cush is the same old jovial soul and it was like old times. — Ed Kruckemeyer, IV, and Charlie Strong, IV, architects together in Cincinnati, are going stronger and stronger and coming very much to the fore in the Ohio metropolis where there are many Technology architects of note.

Among the classmates for whom we have long been without an address are: Marcus S. Beecher, XII; Matthew B. Black, I; Earl R. Brown, II; William J. Buckley, I; William R. Cannon, IX; Chushen Chow, X; Irving C. Creighton, II; Daniel J. Crowley, Jr., III; Carlos deLanda, IV; John E. Dunphy, IX; Vernon S. Foster, VI; Raymond W. Frost, I; Jacob Goldberg, VI; Alton S. Hallett, Jr., III; Merton W. Hopkins, I; Edward Kennedy, III; James J. Kennedy, XI; Thomas Larkin, I; John D. McNamara, III; Homer O. Mills, III; Silas M. Ratzkoff, II; Benjamin Robinson, IV; Edgar C. Savage, II; John B. Walcott, VI; and George B. Wilbur, V. Any information regarding any of these men will be appreciated.

Our beloved Eleventh Day of the Eleventh Month falls on Sunday this year but our good friends, Dennie and Jack, will probably schedule an Eleventh Get-together on Monday, November 12, an account of which will appear in the next issue of *The Review*. — ORVILLE B. DENISON, *Secretary*, The Lamson Company, Syracuse, N. Y. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

'12 There were two or three courses at the Institute whose graduates seem to travel so far and frequently that we find it hard ever to catch up with them. However, our drag net has pulled in three interesting specimens which we dutifully present for your inspection this month.

Course III, step up and do your stuff! John L. Bray, Professor of Metallurgy at Purdue University, Lafayette, Ind., speaking: "After graduation I was employed in various capacities with the Braden Copper Company in Chili. I returned from South America shortly after the start of the war, and went to British Columbia where I did some metallurgical research for the Consolidated Mining and Smelting Company. I was next connected as metallurgist with the Black Butte Quicksilver Company, getting out mercury for torpedoes at Mare Island Navy Yards. I then enlisted for service in the engineers, and was in Washington until the close of the war. Shortly after the Armistice was signed I went to South America again as superintendent for the New York and Honduras Rosario Mining Company. After a year and a half with them I was engaged by a New York syndicate to go on an exploring expedition into the Patuca River region along the border between Honduras and Nicaragua. I put in a rather exciting six months on this trip for, incidentally, I became involved in one of the South American revolutions, and was very fortunate to get out with a whole skin.

"After my return from South America I was engaged as professor of metallurgy at Nova Scotia Technical College for a year, and then went with the United States Tariff Commission in Washington. As metallurgist I conducted certain investigations for them along metallic lines in connection with the tariff.

"I have now been at Purdue University as professor of metallurgy for six years, and am endeavoring to build up a strong department of metallurgy. Situated as we are here, close to the steel industries of the Calumet region, and to the even greater industrial region of Indiana, Michigan, and Illinois, we believe that there is an excellent opportunity for education along metallurgical lines. I feel that we are not too optimistic, for this year we are graduating nine seniors in metallurgy, fully as many as they will graduate this year at Technology. Purdue, as a whole, is growing very rapidly. We now have two hundred and eighty men in chemical engineering of which metallurgy is a part, and about four thousand students in the University as a whole. I believe I told you in my last letter that I am now working on my doctorate in metallurgy at Technology, and plan to spend the winter session there next year, having obtained sabbatical leave from Purdue University.

"As to hobbies, perhaps a line of endeavor which comes closest to a hobby is that of deep sea fishing. For two summers now I have shipped as one of the crew on a Gloucester fishing schooner, once on a swordfishing trip of five weeks

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to Georgia's banks, the other ground fishing. Needless to say, I had some rather exciting experiences on these trips, but I do not believe you wish me to detail them here."

Now that's what we call a good letter—informative, interesting, complete. We need more like it in these columns. And we are fortunate in having another one or two up our editorial sleeve this month. Course I, make your little bow to the boys. David James Guy, in a few well-chosen words tells his story as follows: "Having started out from the 'glorious old Institute' armed with Technology theory, encouraged by many new friendships, and spurred on by some little personal ambition, I cast my engineering bread upon the water, and must confess that it is not coming back quite as fast as one could enjoy. To elect Course I as a profession and to have been graduated as a civil engineer, classes a person in the greatest conglomerate to be found in professional life. Of course, one way to emerge is to get into the species called 'specialists.' At present I might be dubbed as specialist in water power matters. Following the direction of Horace Greeley, I went West after graduation and ran the gauntlet of 'mud spy,' concrete inspector, construction superintendent in dam and power house construction. Then, fortunately or unfortunately, I drifted into the rôle of a professor and restudied my mathematics in a desperate effort to keep ahead of the budding engineering students. After two or three years, I returned to water power questions and took up investigational work with the United States Geological Survey. This gave me an excellent opportunity to familiarize myself with power streams throughout the country as well as become acquainted with operating companies. When the Federal Power Commission was created, I was transferred to that organization, where I remained until about a year ago, when I accepted a position with the Chamber of Commerce of the United States as specialist in water power and water resources in general.

"As for the usual questionnaire, I am married and have two children, one boy and one girl. Home address: 2227 Twentieth Street, Washington, D. C.; business address: Chamber of Commerce of the United States, Washington, D. C. Health excellent, and the only ambitions I have which might be classified as hobbies are to play tennis and chess until I have rounded out the allotted three score and ten years."

Politics are in the air at this writing. However, it will all be over by the time this burning message reaches you. So we'll just let a Hoover booster have his say. Course XI, front and center! Harry L. Ferguson, chief sanitary engineer of the Illinois Department of Public Health, wants to know what has become of all the other Course XI heroes. So do we! Won't some of them please emerge from their sewers or wherever they hide, and write us. Harry Ferguson has done his share as follows: "After graduation I

got up my nerve as a New Englander to look beyond the west bank of Hudson River and with a pass donated by the Pennsylvania Railroad went to Fort Wayne, Ind., to work on the engineering maintenance of way staff during the summer of 1912. In September, 1912, I went to Urbana, Ill., as assistant engineer of the Illinois State Water Survey, having been recommended by Professor Porter to Paul Hansen, XI, '03, chief engineer. That survey handled public water supply and sewerage work in the absence at that time of a sanitary engineering division of the Illinois Department of Health, and thus my Course XI studies became of value to me.

"In May, 1917, I entered the first Officers' Training Camp and was commissioned First Lieutenant in the Engineer Corps. I was ordered to France the fall of 1917 where I was assigned to the chief engineer's office, Advance Section, S. O. S., until the war ended. On return to the United States I rejoined the Illinois Water Survey as principal assistant engineer until July, 1919, when I became principal assistant engineer of the Illinois Department of Health. In 1920 I was made chief engineer and have served in that position ever since. The engineering division has been enlarged from time to time so that we feel that Illinois is fairly well along in public health engineering. Incidentally, the last four years I have served as a trustee of the Springfield Sanitary District, which district is handling fairly large intercepting sewer and treatment plant projects. This position is one of those of honor and glory and no pay.

"On December 4, 1920, I was married to Zelda Nadine Henson of Illinois, graduate of Northwestern University in 1913. We have one daughter, Nadine, born September 24, 1925. In 1924 I built a home in Springfield, my headquarters, and combined with having married an Illinois girl I feel more or less like one of the natives, and believe that Illinois has been, is now, and is going to continue to be one of the great states of the United States. As to hobbies, years ago I gave up golf and more recently have given up most of my tennis and get my exercise, recreation and pleasure taking care of flower and vegetable gardens, and my little girl does her best to keep me from getting too old.

"I have been back to Boston nearly every year since 1912; attended the reunion in 1916, and have my calendar marked for the Twenty-Year Reunion in 1932. Occasionally, I have run across 1912 men in my travels, including John Hall, XI, New York City; F. L. Mowry, XI, Chicago; Francis Kingsbury, XI, Boston; and have tried to find Cory, I, at Jerseyville, Ill., and Greenleaf, I, at Rock Island, Ill. I enjoyed Eicher's account of the Irish-French wedding published in The Review after the war. Can you dig up Bill Collins, XI, and Duyser, XI? As far as I know, Kingsbury and I are the only Course XI men still in sanitary engineering work. I have found every study in Course XI of value in my work.

Formerly we had several Technology men on our staff, but the number of Course XI graduates decreased and were harder to get, and some of the middlewestern universities have good courses in sanitary engineering, so at the present time there are no Technology engineers on the staff except myself.

"I just returned from a 2,300 mile trip through Ontario. Beautiful country and fairly good roads. By the time this news item is published, if you are willing to risk publishing it at all, Hoover will have been elected by a large majority and I shall still be planning on seeing you and the living and live ones of 1912 at our Twenty-Year Reunion in 1932." And, Gentle Reader, if you consider yourself one of what Harry Ferguson dubs the "live one," don't forget to start planning for that Twenty-Year Reunion in 1932.

A. R. Hammond writes that he is now at Quirnavilca, Peru, working as smelter foreman for the Northern Peru Mining and Smelting Company which is a unit of the American Refining and Mining Company. His mail address is Northern Peru Mining and Smelting Company, Trujillo, Peru. It is a copper mine and is located at 3,000 feet above sea level. One interesting note by him is that the miners wear a sort of sandal, called yanquis, made out of old automobile tires. However, some of the miners go barefooted. Labor is not very efficient and the workmen are nearly all coke chawers which makes them dumb and stupid, and about their sole ambition is to acquire coke and booze. Quirnavilca is about 140 kilometers from Trujillo, the latter being the head office for four different mine units, two mills and a smelter in that district. They have a coal mine about one hour's ride on mule back from Quirnavilca. The smelter is at Shorey about two miles in a straight line from Quirnavilca. Outside of working and sleeping, Hammond says there is not much excitement there but that they get a fifteen-day vacation every six months which gives them an opportunity to go down to the coast and enjoy a lower altitude.

F. A. Robinson, who has been in the oil burner business for some time, has recently joined the Parkman-Wasgatt Company, Inc., 616 Commonwealth Avenue, Boston. They are handling S. T. Johnson Company's industrial oil burners. —H. T. McDonald, III, reports that he is still with the U. S. Smelting and Refining Company, located at their Boston Office, 1 State Street, an easy number to remember. —FREDERICK J. SHEPARD, JR., Secretary, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, Assistant Secretary, 411 Maitland Avenue, West Englewood, N. J.

'13 No notes have been received by The Review Editors from the Secretaries of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to

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GEORGE P. CAPEN, *Secretary*, 50 Beaumont Street, Canton, Mass., or to ARTHUR L. TOWNSEND, *Assistant Secretary*, Room 3-435, M. I. T., Cambridge A, Mass.

'14 The South appears to have made a strong impression on C. W. Ricker. First he went down to North Carolina and now we find him located in New Orleans, where he is professor of electrical engineering at Tulane University. Rick started his letter off with an enticing invitation to come down and visit him during the Mardi Gras. His letter sounded so good that your Secretary nearly decided to hold the Fifteen-Year Reunion there. Between Rick's bid for the Mardi Gras festival and W. A. Snow's promise as city manager to hand us the keys of Miami, this reunion affair begins to look interesting. — The telephone industry seems to be a great field for patents. A recent issue of the *Patent Office Gazette* contains the information that Patent No. 1,678, 672, covering a Two-Way Radio Telephone system, has been issued to H. A. Affel of our Class.

Your Secretary is doubly happy to write this particular item. After an absence of twelve years, J. W. Horton has returned to Cambridge. During these twelve years, Horton has been with the Bell Telephone Laboratories, and had risen to an important executive position on research problems. He returns to Cambridge as chief engineer of the General Radio Company. In his new position he will be associated with your Secretary in the development of radio-frequency measuring apparatus. — H. B. RICHMOND, *Secretary*, 100 Gray Street, Arlington, Mass. G. K. PERLEY, *Assistant Secretary*, 21 Vista Way, Port Washington, N. Y.

'15 I don't know anything that has given me more pleasure and pride in this job as Class Secretary than the response to the requests for class dues. It was great to see so many familiar names on the checks and with the cash sent in. But there are a good many more, equally as familiar and as well known in the Class from whom I should like to hear. From our list of 445 there were 72 who paid dues, which third grade arithmetic shows you to be about 16 per cent. Look up that self-addressed stamped envelope I sent you and send me back a check. Many of the fellows availed themselves of the splendid chance to write in something about themselves and other classmates so we have the following interesting notes for our column. But in it all is the sadness of the deaths of Edmund B. Cooper and Alden D. Wheeler, Jr. Raymond G. Cooper wrote that Ed died on March 22; and from New Castle, Ontario, Mrs. Vivian Wheeler wrote, "My husband, Alden Dodge Wheeler, Jr., of the Class of 1915, died on July 30 in Boston. He leaves a little daughter, Diana, aged seven, and a son, Alden D. Wheeler, 3d, aged five years." Unfortunately, we had no record of either of these sad losses or we could have spared the sorrow of reminding these families with Class let-

ters. To each goes the sympathy and feelings of our Class, and to Mrs. Wheeler and Mr. Dodge I shall write personally for the Class.

Phil Alger sends best regards from Schenectady. I stopped off there to see him recently and enjoyed a pleasant visit. He says Vernon Kennedy, VI, has left farming in Nebraska for an executive position with General Motors in their New York offices. — Arthur Ball writes from the coast, "Would advise you of my new address which is Director Technical Bureau, Association of Moving Picture Producers, 6331 Hollywood Boulevard, Hollywood, Calif. Before making the change from Technicolor we completed shooting on three features, the most important of which is 'Redskin' with Richard Dix for Paramount. This will be released this winter." I remember the other color picture which Art made, "The Black Pirate," was good, so let's look forward to some more of his work in "Redskin."

Casselmann writes from 506 Roslyn Place, Pittsburgh, Penna., "Collecting money is not the most agreeable job in the world, and I wish you the best of returns from your new attempt to gather in some funds for the Class. I am now living happily at home and willing to recommend married life to all those remaining members who have not yet tried it. I am still at the Mellon Institute and remain unofficially in charge of the manufacture of clay refractories for the American Window Glass Company. I have not seen any '15 men in a long time, with the exception of George Whitwell, who has a job with the M. I. T. Club of Western Pennsylvania. I saw him at a meeting some months ago when President Stratton was here, and George acted as toastmaster. I expected to see you out this way before now. Be sure and look me up when you come." Shortly afterwards I met him in Pittsburgh where we talked over class affairs, his recent trip abroad, and the window glass industry, which apparently needs a lot of attention from Casselman to compete with imported products.

Ever reliable and humorous Jerry Coldwell at 126 19th Street, Jackson Heights, New York City, writes: "A fine idea. This letter just caught me after a return from Huntington, W. Va., and an outboard trip to Cleveland on Tuesday of this week." — Mr. A. C. Bouchard answered, "My son, C. S. Bouchard is working in Europe and will probably be there two years." Let's hear from you over there. — And then this choice bit from old Daley in Philadelphia. It looks as if Chicago is getting some competition. "Check for two bucks enclosed. I have a bit of news to give you though. I am still at the old stand and supporting the same wife and two growing boys, aged seven and four and one-half years respectively. Up to date I have not been called before the Grand Jury investigating the bootleg and gangster racket in Philly, although about everybody else in town has been summoned." — But here's the prize from Dave Hughes. "Your heart rending ap-

peal moves me to tears, also \$2." The first line from Dave for years, but even that moves me to smiles when I think of him and how he used to behave. I wonder what he is like now.

In writing "Glad to hear from you. Enclosed check is for class dues. Come out to the coast to see us some day," Kenneth Kahn failed to enclose any check to pay for the journey. — Donald W. Perin is now chief engineer of the American Freight Service, Inc., 17 Battery Place, New York City. — R. B. Stringfield wrote the sad news of Spike Wheeler's death and paid him a fine tribute: "Suppose you heard of the death of A. D. Wheeler of Boston about August 1. He was with the Goodyear Tire and Rubber Company from graduation until heart trouble forced him to give up active work about three years ago. He left a host of friends as no one could have been better liked. He leaves a wife and two children. Those of us who have been in Akron will like to remember him as he was when the six of us there held our ten year reunion in 1925, and he was the life of the party. Morse, Kimball, Kellar, Walcott, and Wheeler gathered at my place. About two weeks later Spike had a heart attack and had to quit. Best regards and check enclosed."

W. A. Swain says, "We shall have a meeting in New York City as soon as the football season leaves me a little spare time." — Walcott writes a good letter from Box 131, North Hill Station, Akron, Ohio: "Your request in favor of the Class of 1915 is granted herewith. Both Mrs. Walcott and I have found much of interest in your Class Notes. Mrs. Walcott, you may or may not recall, was Pat Foot of Parry Sound, Ontario. We spent a day in Boston last week and took a turn about the new Technology buildings. As our errand in Massachusetts was the sad one of burying my mother, who died while here with us, we were not in a mood for much looking about the old haunts. During almost four years in Akron we have taken a great deal of pleasure out of our contacts with the many Technology men here. There were six '15 men here up to the passing of Spike Wheeler, a sad loss to us here who got to know him and his wonderful qualities so well. Then Ray Stringfield was moved to California. The Norris Kimballs and we have both added infant noses around our respective boards during this past year. The Kimballs now count four children, and we have three. Look us over when you are out this way." He, too, speaks highly of Wheeler. I worked a year following graduation with Walcott, Pollard, Lapp, Wilde, '14, and some others at the Nobel, Ontario, plant of Canadian Explosives, Ltd. I remember Mrs. Walcott and hope to see you both soon when I am next in your city.

In answer to class dues, one guy, name withheld, asks, "Would appreciate an explanation." I take this to be facetiously meant, as I recall his actions too well in that 1925 reunion ball game. — One by one only a few of us are left. See what has happened to Pinkham: "Announcement

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was made of the wedding on October 20 of Miss Katherine M. Elliott, prominent society girl of Montclair, N. J., to Mail-lard B. Pinkham of Boston. He is a graduate of the Massachusetts Institute of Technology and the Harvard Graduate School of Business Administration." Congratulations and best wishes. Notices of weddings and babies are coming in so often that someone will have to make a suggestion for a standard answer, you know, something like "Letter No. 4 A to the bride and groom" or "No. 711 to Whose Is This New Baby?"

From Professor Locke's reliable office comes additional news. "George M. Hohle, who has been superintendent of the blast furnaces for the Bethlehem Steel Company at Bethlehem, Penna., has been moved up a peg and is now superintendent of blast furnaces and ore docks at Sparrow's Point plant of the Bethlehem Steel Company." Our congratulations to George on his advancement and best wishes for success in his new position. Joe Livermore's note of June 12 missed the early editions, but, nevertheless, is welcomed now. "Our faith in human nature often receives a setback and mine has in this case when only two men replied to the letters I sent out to ten. The results are — no funds. My own subscription I will pay as soon as I possibly can. I am sorry to be late in making my report, but I had hopes of receiving a belated reply from some of those on my list." Our Class gave \$25.00 this year for Dr. Allan W. Rowe's work with the Alumni Advisory Council on Athletics. Many thanks for your feeling and promptness in sending in your class dues and my appreciation of your interest and spirit in writing in those good notes. The class is now dismissed. — AZEL W. MACK, *Secretary*, 377 Marlboro Street, Boston, Mass.

'16 No notes have been received by The Review Editors from the Secretaries of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in the Review Office. Members of the Class having news or inquiries should address them to RUSSELL H. WHITE, *Secretary*, Rand-Kardex Service Corp., 118 Federal Street, Boston, Mass., or to CHARLES W. LOOMIS, *Assistant Secretary*, 7338 Woodward Avenue, Detroit, Mich.

'17 We had planned to say that Mr. James W. Doon, President and General Manager of the K and C Manufacturing Company of Henniker, N. H., was now a member of the New Hampshire Bar. An intimate friend and recent visitor of Mr. Doon's, however, says that the modest gentleman prefers that no publicity be given to his legal attainments and we are, therefore, left with nothing to say until next month.

H. C. Newman and Frank O'Hara were in Cambridge last month and earlier in the summer. Frank Butterworth paused there a minute or so. Frank O'Hara is

still with the Cheney Silk people in South Manchester, Conn., while Butts is Factory Manager of the Marion Shoe Company, Marion, Ind. Dutch is with the Newman Construction Company of Des Moines, Ia., and qualified, therefore, as one of the few Course IV₂ men who are practising what they supposedly came to Technology to learn about. E. A. Gramstorff, a member of the faculty of Northeastern University, is another Option 2 man who remains in the field of structural engineering, and Irving McDaniel is a possible third. Mac, as is generally known, is in the Navy and as an officer in the Construction Corps sees to the repairs of the Pacific Fleet. Although the present visit was the first Dutch has made to the Institute since 1917, he seemed to have kept fairly well in touch with affairs by reading The Review and by meeting occasionally with other Alumni in Des Moines, which, according to Dutch, is located on one of the two concrete trans-state highways which Iowa opened this summer. As a booster for that state, Dutch maintains a position of cautious conservatism although he vigorously expounded the advantages of Des Moines as an overnight resting place for Coast-to-Coast motorists. — RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge A, Mass.

'18 The first thing is Merry Christmas and a happy and prosperous New Year to all the members of the Class of 1918.

During my travels I happened to be in Albany over the last week-end and tried my best to get in touch with our old friend, Elliott D. Harrington, who is now, and has been ever since leaving the aviation section of the Army, at the General Electric Company in Schenectady. It was impossible to get hold of him as he was such an elusive person. But I can say that I heard from him around reunion time and everything was going wonderfully for him. His family has now stretched from one to four, including Mrs. Harrington and two sons.

All those who ordered copies of "The Eighteenth Amendment" will have them long before these notes appear in The Review. Those of you who did not order a copy will regret it, I fear, as it certainly is a great publication. More than one hundred of the fellows responded to our request for letters and the book itself is more than one-half again as large as we had thought it would be when we first started the work. Thanks to Maggie Magoun's hard work and constant toil it has been a great success. If any who did not order a copy are interested now, just drop me a line and I will see what I can do about getting one for you.

To the Eighteeners in and around Boston, please plan on attending the Alumni Dinner in January. Our Class shows very poor spirit when it comes to these gatherings and our numbers are very small. The Classes of '17 and '19 always go way ahead of us and that should not be. New York, even, shows

better spirit with their gatherings than we do. One more thing, plans are going forward now for a get-together of the Boston crowd so that the movies taken at the Reunion can be shown to us. Next month I promise faithfully that we will have more news than this, but circumstances interfered this time.

Oh yes, I have one more piece of news that has come out from the letters in "The Eighteenth Amendment." Maggie Magoun does not have the Class Baby in his home. Clarence E. Richards, who is now in the Middle West, has a son born July, 1919, four months earlier than Priscilla Magoun. Congratulations to you, Clarence. We are glad to find out where the Class Baby really is. — GRETCHEN A. PALMER, *Secretary*, 148 State Street, Boston, Mass.

'19 No notes have been received by The Review Editors from the Secretary of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to WILFRED O. LANGILLE, *Secretary*, 144 Acme Street, Elizabeth, N. J.

'20 No notes have been received by The Review Editors from the Secretary of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to HAROLD BUGBEE, *Secretary*, 9 Chandler Road, West Medford, Mass.

'21 Having just returned from Canada, the Assistant Secretary will leave off his song in praise of "Brown October Ale" long enough to chronicle a few happenings ere he journeys once more to the Land of Liberty. Always a popular place but 21-ers seem to keep out of sight — at any rate, he was able to locate representatives of 1908 and 1913 only. For the statistically inclined, it might be noted that three of seven technical men in the party (need we state it was a business trip) were Technologists, and further, that one evening after a walk over the bridge from Ottawa to Hull, one of the remaining four noted that the Technology contingent had increased to six! But he must return to 1921 news, scarce as it continues to be.

The October issue of *The Tech Engineering News* contains an article on "The Neon-Electric Stroboscope," the author of which is given as Daniel O. Woodbury, '21, Engineer, General Electric Company. Ah there, Dave, come out from behind that Halloween mask of "Daniel" and give the lions a rest. — Way down there at the Atlanta Regional Meeting of the American Institute of Electrical Engineers on October 31, S. M. Jones, VI, of the Alabama Power Company presented

1921 Continued

another paper. This time the title was, "Power-Limit Tests on Southeastern Power and Light Company's System," and it was presented jointly with Robert Treat of the General Electric Company. — A. B. KINZEL, IX-B, of the Union Carbide and Carbon Research Laboratories, Inc., was among those who presented papers at the recent Philadelphia convention of the American Society for Steel Treating.

Say there, gang, where's all that news? The Yuletide season will be almost here as you read these words, — get into the spirit and take a minute off to answer this impassioned appeal. Don't forget that the free lunch offer still is open to those who will run over from Philly to Camden, — who's next? — R. A. ST. LAURENT, *Secretary*, 225 Cleveland Avenue, Whiting, Ind. CAROLE A. CLARKE, *Assistant Secretary*, Victor Talking Machine Company, Camden, N. J.

'22 No notes have been received by The Review Editors from the Secretary of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to ERIC F. HODGINS, *Secretary*, 8 Arlington Street, Boston, Mass.

'23 No notes have been received by The Review Editors from the Secretaries of this Class for inclusion in the December issue. The Secretary received the usual notification that copy was due, accompanied by such news as had been compiled in The Review Office. Members of the Class having news or inquiries should address them to ROBERT E. HENDRIE, *Secretary*, 12 Newton Street, Cambridge, Mass., or to HORATIO L. BOND, *Assistant Secretary*, 37 Concord Avenue, Cambridge, Mass.

'24 The Boston *Evening Transcript* of September 20 announced the wedding at Syracuse of Harold Hazen to Miss Katherine Salisbury who has been connected with Technology for two years. — Announcement has been made of the engagement of Philip Bates to Miss Eleanor Johnson of Newton. Phil is bacteriologist with the Frigidaire Corporation in Dayton. — HAROLD G. DONOVAN, *General Secretary*, 139 Girard Avenue, Hartford, Conn.

COURSE I

In spite of a long summer during which all the members of the Course were to write me and tell me their sad stories, news is very scarce.

One item of note: last spring Sam Shultz was awarded a John R. Freeman traveling scholarship in hydraulic-laboratories of Europe, especially those of Germany. Previous to the award, Sam had been connected with the I. P. Morris Company, builders of hydraulic turbines in Philadelphia. He was engaged in

development work and tests. I ran across him at Open House night last spring where he had charge of the I. P. Morris exhibit. Sam's present address is the American Express Company, Charlottenstrasse, Berlin, Germany.

Numerous address changes have been forwarded to me by the General Secretary. From these I can gather a good idea of where you are all wandering to, but would like some definite news. Get out the old pen and ink and let her go. Following are a few brief hearsay items. Ed Sheiry obtained his Master's Degree last June and thereupon headed West, having been last heard from in Portland, Ore. — Ed Winger pulled up stakes last spring, severed his connection with Barney Ahlers Company, and also followed the setting sun. Present whereabouts unknown. — Russ Ambach seems to have migrated North and is now with the Pennsylvania Crusher Company in Philadelphia. — I am now sojourning in Middlesex, Vt., having been here since the middle of June. I am acting as resident engineer on construction of a dam and powerhouse on the Winooski River. The project replaces one destroyed by the flood a year ago.

It is already time to talk reunion. Plans are already well under way and those in charge predict an event of unparalleled brilliance. Make your plans now, save your money, apply for your vacation early, and plan to be on hand. Write me that you will come so that I can keep the entire course posted as to what a complete affair this reunion is going to be. — JOHN D. FITCH, *Secretary*, Chas. T. Main, Inc., 201 Devonshire Street, Boston, Mass.

COURSE XIII

During the summer months few changes have taken place in Course XIII. El Thayer, as most of you are aware, was married in June and has settled down in Weymouth. — Fred Ashworth has severed relations with the Blackstone Valley Gas and Electric Company of Pawtucket and has returned to Boston to work for the Emerson, Mason Company. Ash feels quite at home as he is in the employ of Technology men and is not far from the Institute. In fact, Ash and the writer renewed old acquaintances only the other day by having lunch at Walker. Any one wishing to get in touch with him can do so by writing to 16 Quincy Street, Wollaston.

The latest bit of news comes from Ed Russell. In the early spring we were notified of his engagement to Miss Helen Vincent, but he has now signified his intentions of marriage on October 6 at Arlington. This looks like another opportunity for a Course XIII reunion. — We were also glad to hear during the summer that one of our class members had received an address from Tony Rosardo. Although I haven't it on hand at the present writing I shall certainly see that every one receives it in the near future. Remember, fellows, this is our reunion year and Course XIII is expected

to keep up its past reputation. — GORDON JOYCE, *Secretary*, 16 Grove Street, Malden, Mass.

'25 Now that vacation time is over and we are settling down to work, the monthly class dinners are with us again. In October, thirteen of us got together at the Technology Club of New York. The Class of '19 had a dinner in the Grill Room at the same time, also with thirteen, which impressed the head waiter very much. He actually looked disappointed when nothing unlucky happened!

Bill Northrop is now assistant to the engineer at Lord and Taylor's. He says his work takes him all over their building. He also told me that John Hoxie is working for Howson and Howson, 65 Liberty Street, patent lawyers. W. F. Sonnekalb is with the same company. — George Stark and Jim Finley dropped in to see us the other night. Jim is down here from Albany to attend a school that the Telephone Company is running for its employees. From what he says about Albany, it must be a pretty good place to live; at any rate, there appear to be as many speakeasies there as here. The fact that Jim is carrying a cane doesn't mean that he is trying to high-hat New York. The fact is, he broke one of his toes while playing duck-on-a-rock. This seems to be Albany's outdoor sport. By the time you read this, Jim's toe will be all right so he can get out and play with the rocks again. George Stark is working for Chance Vaught, making airplanes. When not working, he can usually be found around the Technology Club.

Jim supplied me with the following bits of information about VI-A. Last June Mr. and Mrs. C. E. Strong of Amityville, L. I., announced the engagement of their daughter, Betty, to J. H. Finley, Jr. Congratulations, Jim! — A. J. Rokicki, who made his debut with Stone and Webster, in Porto Rico, was rumored to be browsing around Albany recently. — John E. Handy has launched himself on the matrimonial sea. John was married last September to Miss Louise Miller, daughter of Major and Mrs. Sanford Miller of Virginia. — Art Rose has been transferred from San Antonio to Selfridge Field. As far as I know, he still enjoys flying.

On September 15, Bob Ashworth and Miss Ellen Mary O'Heir were married in Lowell. Freddy Dolan was one of the ushers. Bob and his wife are now living at 352 Pearce Street, Fall River, Mass. — Eddie Ogawa and his wife sent me a card this summer saying that they hoped I was in good health during the hot weather. Maybe he doesn't know I've read the card yet, for it was written in Japanese. In a recent letter from Tientsin, China, Eddie says he is now visiting the G. M. C. dealer there and is up to his neck in work. At the time he wrote the letter he was ready to leave the town, but there wasn't a train for three days and on account of shallow water the only way to get a steamer is to take a launch down river for about twenty miles.

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Eddie wants to be remembered to all his friends: Roger Ward, Henry Bacon, and Al Thatcher in particular. — Cowan, Parkinson, Preston, Wheeler and Company are enjoying life in their new apartment. What with a gas stove and a gas refrigerator to play with, life has nothing more to offer for an engineer. — FRANK W. PRESTON, *General Secretary*, 102 East 22d Street, New York, N. Y.

COURSES III AND XII

My gravest fears regarding I. M. Symonds were not unfounded for on August 5 last he was married to Miss Virginia Walker, at Rogers, Ark. Sy left Miami, Ariz., on July 21 in a new Ford bound for Arkansas. The trip took four days, seventeen hours of which he spent plowing through fifty-two miles of Texas mud. From Rogers he journeyed eastward by train to spend a few days with his mother at Brockton, Mass. He then returned to Rogers, went through the trying ceremony, and the young couple started back for Arizona. The wedding trip took them through Oklahoma, Texas, several cities of New Mexico, and finally into Arizona where they visited the Petrified Forest, Painted Desert, and the Grand Canyon. Mr. and Mrs. Symonds are now residing at 831 Merritt Street, Miami, Ariz. Sy informs me that he is now doing experimental work on ball mills at the Inspiration Mill. — Another one of the Course took the step this summer, for on August 20, E. L. Wildner was married to Miss Flora Elizabeth Trinnel at St. Paul's Church, Holyoke, Mass.

Eddie Cahill came through with a long letter the early part of the summer. During the last year he has put in about six months in the Colorado Rockies with a mining engineer. Just as he had an oil job lined up, he caught the "flu" and was laid up for a while. He then took a position with a railway survey party doing some work for the Illinois Terminal Railway near St. Louis. — Just a few days ago, the fellow who used to think up more forms of recreation to keep the men satisfied at summer camp than any six men, Ralph "Az" Illsley, showed up at Technology. He is looking fine and is now with the Roxana Petroleum Company and living at San Angelo, Texas.

We must not fail to mention Count Blonsky. He landed a job with the Dorr Company at Westport, Conn., last June. After four months there he was shifted to Worcester, where he expects to be for several months. He dropped down to the summer camp for a few hours during the latter part of the season. — Dr. H. T. Mann took an extended automobile tour through the oil fields of Texas and Oklahoma this summer. He also spent a week at the summer camp in charge of the mining practise and is now back at school, busier than ever, for in Professor Hutchinson's absence in South America he is taking his subjects in addition to the regular petroleum subjects.

As for myself, I managed to keep very much occupied the entire summer. Two weeks before school closed I reported to

the office of the Swedish American Prospecting Company at Toronto, Ont. Nearly a week was spent there and during that time opportunity was found to visit Niagara Falls and other points of interest. About the first of June, with one of the company field men, I started for Newfoundland. We traveled by rail to North Sydney, Nova Scotia, thence overnight by boat to Port aux Basques, Newfoundland, and then overland for twelve hours by narrow gauge railroad to a point a few miles north of the famous Buchans Mine, one of the great discoveries of electrical prospecting. The next month was spent under canvas and they were busy days. Every day was spent tramping, mostly over bogs, and running prospect lines while every evening was devoted to map work. Nevertheless, an enjoyable time was had and much experience gained despite the daily onslaughts of literally thousands of black flies and mosquitoes. Before returning to civilization and surveying camp, a few days were spent at Buchans looking over the mine and mill. It was at Buchans that M. J. Buerger spent several months this summer on geological work. On the day of my arrival there a bitter tennis tournament was in progress between Buchans and Grand Falls, a neighboring town fifty miles away. Buerger, playing the final match of the tournament, saved the name of Buchans by defeating his opponent and making the final score a tie. I am now back at Technology and would like very much to hear from some of the men who have been so silent for the last three years. — F. L. FOSTER, *Secretary*, Room 8-219, M. I. T., Cambridge, Mass.

26 The Secretary discovers that his class note folder is virtually empty this month; there is as great a paucity of news items about members of the Class as there are Democratic votes. 'Tis true 'tis pity; and pity 'tis 'tis true; but here 'tis.

First the marriages. Announcement has been made of the marriage of Miss Dorothy G. Conant to Arthur F. Underwood. The wedding took place in Trinity Church, Boston, and Philip Robinson acted as best man, while Raymond Underwood, '29, Willard Mathewson, '26, and Emil O. Malmquist, '28, were among the ushers. The bridal couple will live in Detroit, Mich., where the bridegroom will enter the research department of the General Motors Company. — On October 17, Miss Ruth J. Peacock of Mansfield was married to R. E. Robertson. Robertson is now an aviator at the Boltz Airport in Mansfield. — On October 20, Miss Laura Allen became the bride of Ralph Adams at Concord, Mass. They will make their home at 1 Goodwin Place, Boston.

The Secretary includes the following letter from Bill Millar, written in the precincts of Cecil Rhodes. It is quoted with much pleasure: "Having changed the scene of my geological endeavor since I last wrote you, I am hastening to add a new address to the roster of wandering '26 men. And just because there happens

to be an 'Africa' in the address, don't expect me to start off with an account of how I shot my first elephant, being attacked by same while I was in possession of nothing more formidable than a Ciné Kodak. (You see, I've read Africa stories myself.) Anyhow, as I was about to say, I haven't seen anything which required the iron nerve and the steady hand (attributes of all African hunters) except possibly a little while back when I had to use a hypodermic needle on one of my black boys. This quite inexplicably hurt me more than it did him, as father was wont to say when he gave me a licking.

"Of course, you can't be a full-fledged field geologist in Africa without carrying a gun of some sort. I tried an automatic first, but as it continually pulled off my English pants I had to desist out of pure modesty. After that a Winchester 54'06 was lugged along by my black gun-boy but this had certain disadvantages, the primary one being that whenever I did want the gun the boy was at least a quarter of a mile behind me. Finally, in utter contempt of a country filled with such ugly beasts as ants, flies, spiders and the like, I gave up the gun-toting project and now rely on my trusty (I didn't say rusty!) geological pick for self-protection. However, before leaving the subject I must take full credit for shooting a big puffadder.

"Being of a helpful nature I would like next to propound a few of the essential characteristics which should be possessed by anyone contemplating life in the African veldt. Foremost among such is a cast-iron stomach. (My metallurgy is a trifle weak but quite possibly a wrought-iron one would be still more serviceable.) The cooking in the field is done by a cook boy, generally one whose previous training consists of a conglomeration of all the things he has been told not to do. I may say, with a certain amount of bitterness, that I consider such training inadequate for the preparation of a meal which will rest with even a modicum of buoyancy.

"Another valuable characteristic is to always expect the worst. I still bear a certain resentment toward the army of soldier ants that attacked my tent one night as I was preparing for a bit of sleep and forced me into the cold world with nothing but a pair of mosquito boots by way of protection from the elements. But the subject of ants would fill a volume and I only sat down to write a letter."

With considerable trepidation over the possibility of starting an internecine war between the Classes of 1925 and 1926, the Secretary reports that Henry Hoar, better known as Hank, was in town the weekend of Columbus Day and put in appearance at the Institute. Hank is now with the National Tube Company in its Department of Metallurgy and Research, a subsidiary of the United States Steel.

A new magazine, entitled *Architectural Progress*, has just recently come to the Secretarial desk, and in its masthead we note listed among its advisory editors, "Professor Alan K. Laing, A.I.A." Obviously the Secretary of Course IV is rapidly achieving fame.

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And that's all. — J. R. KILLIAN, JR., General Secretary, Room 11-203, M. I. T., Cambridge A, Mass.

COURSE IV

It has come to the ears of Ye Reporter that one Homer Huntoon is engaged in imparting architectural instruction at the University of South Dakota, and that said classmate is offering an added inducement to prospective students by giving accordion lessons. Several members of Course IV have signified their intention of enrolling in the institution.

In concluding this lengthy report, the writer remarks that he is rapidly regaining his school-boy complexion after a summer exposure to the golden sun of California, and that he is anxiously awaiting news items from Course IV and IV-A. — ALAN K. LAING, Secretary, School of Applied Arts, University of Cincinnati, Cincinnati, Ohio.

COURSE XV

Quite a few of you have crashed through with replies to the recent circular. The rest of you do likewise, and those who have already replied send along an occasional letter.

Several of the crowd chose October's Indian Summer days to enter the blissful state of matrimony. Cedric Thompson, who is now in the planning department of the Boston Rubber Shoe Company in Malden, wrote that October 13 was the date set, but didn't say to whom. I suppose all went well as I've heard nothing to the contrary. — Harry Howard was married on October 20 to Miss Louise Hill. Several of the fellows, no doubt, remember her as Harry was frequently seen with her while at Technology. Others who are married include E. B. Stallman, now with the Bell Telephone Laboratories in New York; Frank Cramton, who is assistant to the sales manager of the Massachusetts branch of the Firestone Tire and Rubber Company, with headquarters in Boston; and Guy Frisbie, who is still doing field work for the Hobart Manufacturing Company out in Seattle. Guy has been quite busy exploring the Pacific Northwest — claims it's a "charmed land." — Bill Lowell, we all know, is President of William P. Lowell, Inc., in Newburyport. Bill has a little daughter, Virginia Anne, born last May. Only recently he has moved into his new home and that has been taking up most of his time. — G. S. Killam, now with the Edison Electric Company of Boston, reports that he was married shortly after leaving school and now is the proud father of a daughter, Hope. — Rexford Bristol is the father of the latest addition to the Course Cradle Roll, Betsy Beri, born August 14.

Now to leave the blissfully content. Old Dave Harrison is the Lindbergh of the Class. He is with the International Aircraft Corporation out in Cincinnati. Only recently he flew from St. Louis to Cincinnati, stopped long enough for a change of clothes, and then continued on to Washington where he sold his plane. Dave so far is just a passenger, as he has an aerial chauffeur to do the stunting for

him. I had a nice visit with him here. — Wick Eddy is still in the Executive Operating Department of the Bell Telephone Company of Pennsylvania; while Nathan Pearlstein, who has had two or three jobs since leaving school, has settled down to being a student in the production course given by the Gillette Safety Razor Company. — George Booth, who was with the Rust Craft Publishing Company, is now connected with the Boston office of the Standard Oil Company of New York. — George W. Breck is also around Boston, being with one of the Babson organizations, Investment Research Company.

Don King is doing construction work with the Carbide and Carbon Chemical Corporation in Charleston, W. Va. Prior to that he was on the University World Cruise. Marriage for him is years off, according to him. Looks that way for a good many of the rest of us, too. — George Edmunds is assistant to the President of the Bond Manufacturing Corporation of Wilmington, Del.; while S. W. J. Welch is assistant to the superintendent of power for the Lancaster Cotton Mills, Lancaster, S. C. — Don Cunningham is busy purchasing new equipment and re-vamping the layout of the shops for Gilbert and Barker Manufacturing Company in Springfield, Mass. — Ralph Head, who is sales manager for the Head Shirt Company, has been busy putting out a new line — pajamas. If any of you fellows are in need, just let Ralph know and he'll fix you up quickly. — G. Warren Smith is doing sales engineering work for the E. Stanley Wires Company in Boston; while Dick Johnson is still with the Massachusetts State Department of Highways, doing estimating. — Leonard Remington is a machine designer for the Thomson National Press Company.

Bill Coker is still doing hydro-electric development work for William C. Whitner, Inc., of Richmond; and Cecil Ogren is on the last few laps of his student course with the C. H. Tenney Company. — Al Bassett is now engaged in export work with Grvatt Brothers, Inc.; while Marty Fireman is merchandise manager for Morgan's, Inc., furniture retailers in Boston. — Gordon Spillette is with the Miller Rubber Company of Akron, Ohio, setting rates. — Bill Sessions, who has turned out to be a patent attorney, is now with the firm of Bates, Golrick and Tearle. — Johnny Jacobs, Secretary for Course II, is now in Washington on a patent litigation case and will be here for a few months. Johnny's home is here, so it seems good to have him around once more.

As to the writer, he is still single. For a little over three months during the summer he devoted his time to a tour of Europe, visiting the various points of interest. Since returning he's been hard at work, trying to replenish the diminished resources. However, he finds time for an hour or so in the evening to devote to Washington's many bridle paths. There's nothing like a good little horse. If you happen in Washington be sure and let me know, even though you're only here between trains.

The news barrel is now empty. Let's see if you cannot fill it up before the next letter is due or I am afraid it will be kind of scarce pickings. Lots of luck to every one. — T. W. OWEN, Secretary, 1431 Eye Street, N. W., Washington, D. C.

'27 If it were not for the Institute's clipping service this column would be almost empty. As it is, the above mentioned service for the Class of '27 seems to just about wreck the clipping budget. Three came in carrying formal announcement that Miss Mary Bullard Saunders had announced her engagement to George Houston on October 6. — From the *Haverhill Gazette*: "Mr. and Mrs. Frank Leach, Plaistow, N. H., have announced the marriage of their daughter, Mary Lucille Leach, to Natenis Kelly [II], oldest son of Mr. and Mrs. Charles N. Kelly of Park Street. . . . After travel through the mountains and New York State the couple will establish their home in Torrington, Conn., where the groom is associated with the Henry Machine Company." — From the *New York Post*: "Announcement has been made of the engagement of Miss Janet Mills, daughter of Mr. and Mrs. Frederick L. Mills of Garden City and Setauket, L. I., formerly of Brooklyn, to Mr. Frederick Stephen Lutz [Course I], son of Mr. Stephen H. Lutz, also of Garden City." — From the *New York Times*: "Miss Barbara Bancroft, daughter of Mr. and Mrs. Frederick Winslow Bancroft, was married here today [at Newton, Mass.] to Robert Charles Wallace, son of Mr. and Mrs. John Foster Wallace of Chicago. . . . After the reception Mr. and Mrs. Wallace left by motor for Indianapolis, Ind., where they will be at home after November 1." — From the *Boston Globe*: "Elizabeth Cushing, daughter of Mrs. H. Harned Cushing of Newbury Street, was married yesterday to Arthur B. Guise. . . . After an extended honeymoon in the South, Mr. and Mrs. Guise will make their home in Braintree." Duke, the Secretary understands, is working for the Cities Service Refining Company. — From the *Chicago News*: "The marriage of Miss Eleanor Danker, daughter of Mr. and Mrs. Daniel J. Danker of Brookline, Mass., to George Cramton Lammert [Course II], son of Mr. and Mrs. Ferdinand E. Lammert, will take place Saturday, October 27, and a reception will follow the ceremony at the home of the bride's parents, 2550 Smalley Court. Miss Danker will be attended by her sister, Miss Mary Danker, and B. T. du Pont [XV] of Johnstown, Penna., a classmate of Mr. Lammert at Massachusetts Institute of Technology, will serve him as best man. Mr. Lammert and his bride will make their home in Chicago." — The Secretary extends best wishes and congratulations to all concerned on behalf of the Class.

Ike Swope dropped in the office the other day, having just returned from Europe. It will be remembered that he was studying at the University of

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Charlottenburg. He stayed there until Heins and then set out to see the sights. Back in this country he is now said to be looking for a job. — The other day the Secretary ran into Sid Badger and was informed that Sid is back at the Institute, working for a Master's degree. It was also discovered from Sid that Charles Kingsley, Jr., is back here also. — Harold Heins, Secretary for Course VIII, has left the Institute to go with the Raytheon Manufacturing Company at Kendall Square, Cambridge.

Last summer we were informed by the General Electric Company that Walter F. Blake, who had been employed by them "as student engineer," had been transferred to their refrigeration engineering department. Neither Charlie Bartlett nor the Secretary has heard anything from Blake since Commencement. Bill Sullivan, VI, who last year was assistant in the Dynamo Laboratory here at Technology, is back again this year on the same job. He hopes to get his Master's degree by next June.

Right here the Secretary wants to again make an urgent plea for the members of the Class to let their whereabouts be known. His stock of news is running low, and he knows that the Course Secretaries are in a similar difficulty. Let us have a little cooperation, please. — JOHN D. CRAWFORD, *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE I

Recently I attended a dinner and get-together of the M. I. T. Club of Central New York in Syracuse, N. Y. I had hoped to meet a few of the "Civils" of '27, but no luck. However, there were a number of Course II, X, and XV men of the years '24 to '26, and O. B. Denison. O.B. is a resident of Central New York now, and works for the Lamson Conveyor Company of Syracuse. Also, he can still entertain a Technology crowd in approved fashion. If he can sell conveyor machinery as he can entertain, his company will have to enlarge the plant to several times its present capacity.

This month I've heard from just two fellows, which means about 1.8% of the Class. Send in some information about yourself and your work. John Drisko sent another interesting letter from Europe which I think should be printed practically as is. For a real understanding of it, however, dust off the map of Europe and follow his travels as you read: "I guess there's quite a lot happened since I last found time to scribble you a bit of news. In the spring, KC Reynolds and I and another chap were keeping bachelors hall here in Berlin. KC's fancy turned to a trip to Sweden — 'So then there were only two.' The bug got me about June 12, so I dusted off the passport and went up to Sweden, too. My chief motive was to see lots of water power plants and laboratories. I got to Stockholm, where Mike O'Brien, '25, had been all winter (and still was), and everything there was so hunky dory that I stayed about three weeks. I was there over the glorious

Fourth and celebrated my independence in the conventional manner. The Yale Glee Club was there on the Fourth and I heard them sing — some of the songs were the same ones we used to sing with the Technology Club — and I sure enjoyed them. While in Sweden I learned a bit of Swedish in the accepted manner — the inducements up there would put your eye out. After leaving Stockholm I saw lots of hydro plants, and visited several turbine manufacturers. I hated to leave Stockholm as it is such an interesting place. The new City Hall is the best building I've seen anywhere.

"After miles of railroad and all kinds of scenery, I got to Oslo, Norway (formerly Kristiana). Count Enger, XV, was away for the week-end, and so I didn't see him. I did have the pleasure, though, of talking to him over the phone. He is well and happy, and was soon going to France. Then I came back via Copenhagen, after having seen a bit more of Sweden. Dr. Stratton was in Europe this summer, but I didn't see him. KC Reynolds went to Paris and saw him, I think. I just recently made a ten-day trip to Silesia to see the flood-control and river-control works on the Oder River and one of its tributaries.

"Samuel Shulits, '24, appeared on the scene recently. He is a Freeman Scholar of Hydraulics from the Boston Society of Civil Engineers for this year. Any of the 'dirty engineers' who went to Humphreys in 1926 will be interested to know that Colonel Markham and his daughter were here a couple of days ago. Ike Swope flew the coop some time ago, and I don't know where he is now. He was here in Berlin all spring. I forgot to mention that when in Stockholm — it was at the Ambassador's Tea on July 4 — I met Professor Norris, who was on his way to Russia." John would like to hear from Bud Gillies. Bud has never sent any information about himself, but I hope some news comes in soon.

Ken Smith sends in some news from Bryn Mawr, Penna. He is now cost engineer on a job in that city. A letter will reach him at Montgomery Inn, Bryn Mawr, Penna. Ken says that Turner gave him this great and glorious title and then shipped him from the Telephone Building in Newark, N. J., to their Philadelphia office where he would be out of the way and could no longer break instruments or drop bricks on pedestrians. He says, "On August 20 I was the surprised recipient of a week's vacation (unheard of in the summer) and transfer to the Philadelphia Cost Department. The vacation allowed time for a few days in and around Boston. I did not see many of the people, as most of them were away. The Institute was all dolled up and I hardly recognized the place. I didn't have time to inspect the new buildings, but the place certainly looks much better. In a few years I imagine we shall go back and tell the students of the terrible dump in which we had to work compared to the splendid plant they have. . . .

"As to my new job, I keep costs on a

couple of jobs — a cigar warehouse at Lancaster, Penna., and a hotel and garage at Atlantic City. I take a look at the job every two weeks and then figure out what the boys are doing with all the money we give them to spend. I come back and tell the company about it by means of reports. I spend the rest of the time taking quantities from plans, analyzing estimates and getting information necessary for reports. This is the nearest I have come to doing any engineering work since we got out. I use a slip stick regularly and I have only to close my eyes to think I'm doing water-power problems again." — LEROY G. MILLER, *Secretary*, 711 West Clinton Street, Elmira, N. Y.

COURSE VI-A

The settling process has commenced. The facts all point in this direction. R. C. Turner and R. R. Smith are now located at the Philadelphia works of the General Electric Company. [The General Electric "News Service" reported on August 4 that Smith "... has accepted a position with the Pennsylvania Railroad of Altoona, Penna." — J. D. C.] — Leach is with the Radio Engineering Department of the General Electric, and Dick Cutts is with the meter and instrument engineering department. — Joe Hammond, Joe Newcomb, Burckes and Wheeler are with Stone and Webster, Inc., for the most part in the statistics division. Burckes joined the Benedicts just after graduation, but no details have come through. It is hoped that the next issue of The Review will provide the whole story for his classmates. — Sam Mawson is with the engineering department of the Alabama Power Company.

This account of the members of the Class of '27 is necessarily short. However, when enough of the facts appear, they shall be published and darkness will cease to cover the whereabouts of those concerned. If you know anything that should be broadcast, send it to the Secretary. — T. H. MAWSON, *Secretary*, 923 South 17th Street, Birmingham, Ala.

COURSE X

Since my last effort for The Review I have waited, and with no result, for news of this Course. I must retract that, for one faithful soul wrote me from Ann Arbor to say that he, Art Connell, was finding what was in oil for E. B. Badger and Sons Company. He labors with the hope in mind of returning to New York or New England for design work, on petroleum stills I should judge. Art gets a big cheer for that letter, the sole help for this column.

Whittier and I are with the research department of the Congoleum-Nairn Company, doing our little bit to produce a floor covering of which you may be proud. It is our earnest plea that all the newly married use linoleum throughout the house. (Not a paid advertisement.) The work is interesting, yet not in the least the chemical engineering which it took five years to assimilate. Walker, Lewis, and McAdams grows dusty on

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the shelf and the slide rule is becoming tarnished.

The address given below is permanent insofar as any one's may be. The mail is always searched for news of the Class, and better yet for those in the vicinity, there is a telephone in the apartment and an open door for those who will call. Open for entrance, not for sudden exit as it sounds. — DONALD H. SPITZLI, Secretary, 751 High Street, Newark, N. J.

'28 During the summer following graduation Joe Parks, Course II Secretary, made a tour of two months through Europe with a group of business men and college professors on a sort of industrial survey of large European manufacturing plants. He says he had a most interesting time and his multitude of realistic yarns proves this statement most conclusively. He spent all one Saturday afternoon and part of the evening recalling some of his experiences to Ralph Jope and myself. They include everything from the depths of the Parisian Gentlemen's Clubs to the peaks surmounted in his attempt at mountain climbing in the Alps. At the present time Joe is working with the I. L. Patch Chemical Company of Stoneham, Mass., in the capacity of efficiency expert.

Bus Ruch, Course XV Secretary, is now working in the wage efficiency department of the Goodyear Tire and Rubber Company at Akron, Ohio, and is learning some of the tricks of the time study and efficiency game. He says that the work is new, novel and extremely interesting. Bus mentions that eight '28 men now in Akron were introduced to the local Technology Alumni Club. The meeting was held at one of Akron's country clubs. — Hector Hagedorn, IV-A, is working as estimator for the A. W. Hofeman and Sons Company on the new University of Rochester buildings at Rochester, N. Y. Hank Harrington of the same course is working for the Metcalf and Eddy Company of Boston. — John Russell, IV, is now an assistant professor of architecture at the University of Manitoba which is located at Winnipeg, Canada. — G. Donald Buckner, VII, has the important position as agent of the Board of Health for the Town of Needham, Mass. He says that he is following the same line of work that he studied at the Institute, communicable disease control, milk sanitation, and the like. Bob Harris of the same course is back at the Institute this year continuing a research on cheese. This subject would seem to have all kinds of latent possibilities. — Bob Joyce, I, is doing some sky-scraping with the Curtiss Aircraft Corporation of Garden City, L. I.

The volume of Class Notes depends, of course, on the number of letters which the Course Secretaries receive and in turn pass along to me. Material for this section must be in the hands of the Course Secretaries by the twentieth of each month as the entire class note section must be in by the twenty-fifth. I am reprinting the list of the addresses of the Course Secretaries who have no notes in this issue: Course III, Walter J. Nock, 17 Martinez Castro,

Mexico City, Mexico; Courses IV and IV-A, A. Reginald Keith, 24 Maple Street, New Haven, Conn.; Course V, A. S. Dempewolf, 449 West 123d Street, New York, N. Y.; Course VI, Peter H. Kirwin, 1201 Fifth Street, S. E., Minneapolis, Minn.; Course VIII, A. G. Hall, 33 St. Paul Street, Montpelier, Vt.; Course IX, George D. Mock, 12 Naples Road, Brookline, Mass.; Course XIII, Gilbert J. Ackerman, 9 Gifford Avenue, Jersey City, N. J.; Course XIV, Charles E. Berry, 103 Nott Terrace, Schenectady, N. Y.; and John P. Bailey, 1100 Quintard Avenue, Anniston, Ala. The addresses of the others follow their notes. I take care of the news for Courses VII and XII. — GEORGE I. CHATFIELD, General Secretary, Room 11-203, M. I. T., Cambridge, Mass.

COURSE I

A letter from Morrill arrived just after we turned in our notes for the November issue of *The Review*. Boys, the General is a proud father — Harold, Jr. was born August 15. Congratulations, Morrill. He enclosed a snapshot of himself and the boy, and says, "Every one says he's the image of his old man but you wouldn't know it from the picture." Morrill is working in the Plant Department of the New York Telephone Company, designing and planning pole lines, conduits, and so on. He's living at 9004 185th Street, Hollis, L. I., N. Y., and invites you all to drop in if you are in that country.

Locklin went to Atlanta to work for the Georgia Power Company, but was loaned to the Alabama Power for a few months so is now at 2737 Highland Avenue, Birmingham, Ala. About his job he writes: "The program, as it stands now, calls for a month of office work, several months at the hydro stations, and then another month in the Birmingham office. The first day I had to prepare the preliminary monthly report for September. Unit costs, operating and maintenance expenses, and so on, all on fifteen weeks' accounting with the honorable Dr. Hanson. At the hydro stations, from what I have been told, I will get a crack at all the jobs from oiler to station operator, that is if I don't get bounced for causing one of Mr. J. Mulligan's "sustained short circuits."

Ken Clark wrote us a very interesting letter about his work in Chicago and enclosed at the same time a letter from Jack Luby. Ken's address is 1246 Pratt Boulevard, Apartment 1206, Chicago. Here's what he says about his job: "I was fortunate in securing a position with the Sanitary District of Chicago, all thanks being due to Charlie. My first job was on the night shift of a tunnel, seventeen feet and six inches internal width and height, and of horseshoe shape. My duties were checking the section mined and giving grade in the morning. The only features worth commenting on is the use of compressed air in one heading. It was only ten to fifteen pounds but, believe me, it was plenty. Never again. About two weeks ago the tunnel was completed and I was shifted to another

construction job, this time a pumping station. At present I am checking the setting of steel reinforcement and watching the pouring of concrete. The steel will all be in shortly and then I will be on the structural steel erection. After that, nobody knows. . . . If Jim Morse is as lax in writing to the school as he is to me, you can't have heard much from him. All I can tell you is that he is working hard for the Texaco Company down in Port Arthur."

Luby is in the wilds of Texas at 405 North Reagan Avenue, San Benito, and expects to be there until January 1. Jack says: "I am what they call steel foreman on this job, the job being a 10,000 K. W. addition to a steam power plant. I put in all the reinforcing steel and when you stop to think that I hardly ever saw any steel before at close range, you won't be surprised to know that I've been having a helluva time. I have two white men in my gang and anywhere from two to eight Mexicans. My Spanish is null and void and hence I am developing into a crack at the sign language. I've worked every day so far, including Sundays and Labor Day — seventeen hours on Labor Day." And, by the way, Professor Terzaghi is going crazy with joy over Jack's thesis, written with Wolff of Course IV-A. We understand that, according to Professor Terzaghi's plans, you may expect to see part of it soon in the *Proceedings* of the A. S. C. E.

And from Mamey a Carmen 25-4, Caracas, Venezuela, comes a letter from Contreras. Duke writes: "Here I am back in Venezuela, true to my word of keeping as far from the Institute as I can. I am doing road work (do not read rough work) and I am perfectly satisfied because I am pulling 200 berries a month. At the beginning, to tell you the truth, I was a public nuisance, doing nothing but keep my eyes wide open and saying that everything was just fine. Now I can compete with many of our professors in being hard-to-get-along-with. Sometime I'll have a picture taken with my explorer's suit and cork helmet on at the head of one hundred men, to see if anyone of you can recognize me."

That about covers the correspondence, but fellows are continually showing up around the Institute. Jake Jameson temporarily disrupted a quiz in Concrete one day when he walked in on his return from Europe. By now Jake is deep in the Maine woods. He got in at the very beginning of the construction of a new hydro plant being built for the Maine Power Company by the Tuttle Company of Boston. Kirk also dropped in one day to tell us how hard Harvard Business School is and also that Bob Harbeck is still in Maine.

Peterson worked in Cambridge City Hall all summer and about the middle of October set out with his family to spend a year seeing the forty-eight states by auto. — We saw Pop Robinson just before he left for New York to try to get a job on subway construction. We hope he was successful. — Gabe Disario is also in New York working on subways and is

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living at 201 West 117th Street. — Charlie Cristofalo is in Waukegan, Ill., on highway work. — Wally Bissell worked in Hartford, Conn., most of the summer but is now in the process of getting located on an hydro-electric job. Congratulations are also due Wally for, we are informed, he was married in September.

That's the dope as we know it. Next month we hope to be able to give you the histories of a few more of those missing since June 5. — GEORGE P. PALO, *Secretary*, M. I. T. Dormitories, M. I. T., Cambridge A, Mass.

COURSE II

The first official response from Course II came from the confines of the Research Laboratory of the Brown Company in Berlin, N. H., where Johnny Praetz is startling the paper world "designing machinery to make the paper mills bigger and better." Johnny also informs me that in addition to his work he is making a study of "heat" as afforded by the New Hampshire wilds; quite simple, he says, with plenty of flames still burning up there and a few more that need kindling. — A Course II colony has sprung up down in Arlington, N. J. Listen to this line-up with Congoleum-Nairn, Inc.: Newton Foster, Warren Fleming, Johnny Reynders, and Gerry Brickett. Some day this firm of Reynders and Brickett will be causing us to stand on our toes and take notice. Newt Foster spent his first month on construction work erecting machinery, laying out work, and such. Then he was placed in the operating end of the work running the machinery that he had previously set up. This is temporary, however, for he expects to be in the plant engineering office soon. Fleming has been on the same sort of work, but he is going into the construction again. Gerry Brickett is in the plant engineering office and Johnny Reynders is doing various engineering jobs about the plant.

From Charleston, W. Va., comes the sad news from Al Shedd that he has a job, but let me give you his way of saying it, "Oh yes, Joe, I have a job too — I visit the office of the production engineering department of the Carbide and Carbon Chemical Corporation daily, except Sunday. They have nice low desks so that all the blood does not rush to your head. That leaves absolutely nothing in your head." Al had better not broadcast this information too well or there will be a lot of Course II men down there looking for similar jobs. Al also reports seeing Lou Kessler, XIII, during the summer and learned that Lou was returning to the Institute this fall.

Ev Lester wrote from Brooks Field, Texas, where he is with the Flying Cadets along with Hank Harris and Johnny Schroeter, '30, who transferred from Cornell last year. He reports that everything is going finely except that Hank has had several distressing contacts with certain wire fences surrounding one of the flying fields. Ev has a great tale to tell about the course of instruction on

the flying field. He has been there since the first of July and hopes to stay there until the first of March when he expects to graduate to Kelly Field at the other end of the town. He says that Brooks Field is the only place he knows of where the elimination system in vogue at Technology is excelled. You are sitting pretty one day and the next you are waiting for your discharge papers. He decided after he left the Institute last spring that he wanted to go to a really hard school and went down there to learn to fly. The school is hard only in flying, and in that it is the hardest he knows of; but the ground school is like the freshman year at Technology, it is so simple. He started in with a class of 97 and at the time of writing the class had shrunk to 57 men in less than three months. At present he has about thirty-five flying hours to his credit.

Dick Spofford and Walter Matlage started off with the du Pont Fabrikoid Company at Newburgh, N. Y., but after a couple of months Dick decided that Matt could keep the du Ponts off the rocks, so he went to the big city and joined the forces of the Postal Telegraph Company, now a subsidiary of the International Telegraph and Telephone Company. Dick is now in the circuit layout and routing department and has been doing a little bit of everything. Matt is living at the Y in Newburgh, and Dick is at the Theta Xi house at Columbia. — JOSEPH A. PARKS, JR., *Secretary*, 14 Carnauba Street, Rosindale, Mass.

COURSE IV-IVA

On the day of the Army-Yale game, I accidentally met Harry Burgess in the New Haven Railroad station, and he informed me that he was leaving on the 31st of October to study Architecture in Paris. He did not know where he intended to study. From that I conclude that Harry intends to feast his eyes on the pulchritude of the fairer sex of Paris before developing his architectural touch a la European. From good authority, I have learned that Mieth Maeser spent the summer in a Utah mountain summer resort, which was full of women. This, evidently, had dilacerating effects upon Slim, for he recently had his tonsils removed. Bob Lawson writes that he is now a draftsman in an arsenal at Dover, N. J. Bob informed me that Heidtman is going to get married. I would like to make this longer, but very few letters have come in. Get busy, fellows, and help me pass on the good news to Cambridge. — A. R. KEITH, *Secretary*, 24 Maple St., New Haven, Conn.

COURSE X

The Technology Club of Akron met at the Fairlawn Country Club for dinner and entertainment on the evening of October 6. The Class of 1928 had the largest representation of any class there, and Course X had the best of any course. After a fine dinner, a few hours were spent enjoying competitive games of skill and chance. All of the 1928 Course X

members in Akron are working hard, saying nothing and sawing wood. That is to say, all are except Bud Reynolds who is now in the efficiency department at Good-year. They say that since Bud has started his new work, production has tripled and costs have been halved. — Mr. Ho is in Akron, taking a course in rubber chemistry at Akron University.

For next month let us have some news! Everybody just give a few minutes to writing an autobiography and your Secretary will edit it. More and better news is our motto. Let's have it! — A. J. GRACIA, *Secretary*, 222 West Market Street, Akron, Ohio.

COURSE XV

This month's Course Notes will of necessity be very brief. The small amount of news obtained from Course XV graduates this month was probably due to the fact that the boys are fast becoming burdened with big business problems.

However, it sure was good to hear from old Bill Birch. Bill says that he started in the automobile business immediately after graduation, and is finding it exactly to his liking. He has associated himself with Birch and Bassett, Inc., of Dover, N. J., and wishes to send his regards to all the members of the Drug Store Club. — Another letter came from Jim White in LaPorte, Ind. Jim is learning how to make metal doors and trims at the Metal Door and Trim Company of that town. Perhaps we can get Jim to write an article for The Review and give us the inside dope on trim manufacturing.

Hank Friedlander is training for a career in merchandising with the B. Altman Company of New York City. At the time he wrote he was working as a salesman in the sporting goods department. Hank says that he doesn't know a thing about golf clubs but he has managed to sell quite a few of them. He also says that Joe Whitcomb, his thesis partner, was in New York for about six weeks continuing work on the cranberry situation. — Cris Case has returned from a stay of six weeks with Dud Smith in Honolulu, Hawaii. Case has given up his financial aspirations and has gone in with his father in the Case Fibre Board Company. His father's old plant burned down this summer and Cris has been applying some of his Business Management principles in the design of a new factory building. He has also worked as contact man, salesman, advertising agent, and plant manager. — George Durgin has taken over Underwood's place as assistant to Professor George B. Haven. Underwood has taken a position with General Motors in Detroit. Dick Hildick is working as assistant to Professors Schell, Freeland, and Fernstrom; and Charley Carter is Professor Shugrue's assistant.

Course XV members will be interested to know of the marriage of William A. Snyder to Miss Madalyn F. Burke, daughter of Mr. and Mrs. Henry Burke of Chicago on September 22. — PAUL E. RUCH, *Secretary*, 853 Harvard Street, Akron, Ohio.



Southwestern Association of M. I. T.

THE Southwestern Association of M. I. T. held its first luncheon of 1928-29 at the City Club, Kansas City, Mo., on October 10. Those present were: H. A. Rapelye, '08; A. T. Cushing, '11; John E. Johnson, '08; R. J. Sholtz, '22; Alfred W. Hertz, '06; William L. McPherrin, '14; Herman C. Henrici, '06; G. W. Hall, Jr., '23; C. S. Timanus, '18; J. W. O'Brien, Jr., '18; B. W. Crenshaw, '24; John J. Falkenberg, '19; J. C. Irwin, Jr., '18; and the Secretary.

The principal business of the meeting was the election of officers for the coming year. After luncheon the nominating committee presented the ticket which was voted straight by all the members present. The new officers are: Bransford W. Crenshaw, '24, President; Eltweed Pomeroy, Jr., '23, Vice-President; Charles E. Brown, '20, Secretary. Discussions of programs for the coming year, and of aviation, inspired by the flight of the U. S. A. S. *Los Angeles* over Kansas City the day before, followed the election of the officers.

The Southwestern Association meets for luncheon at the City Club, Kansas City, Mo., on the second Wednesday of each month. We will be glad to have visiting Alumni meet with us whenever they are in the city.

The first meeting of the Southwestern Association of M. I. T. was held on Wednesday, November 14, at the University Club at 12:15 P. M.

The officers of the Association for this year are: President, Bransford W. Crenshaw, '24; Vice-President, Eltweed Pomeroy, Jr., '23; Secretary-Treasurer, C. Ellsworth Brown, '20. These officers have appointed the following committees for the coming year: Scholarship and Schools Committee, George W. Hall, Jr., '23, Herman C. Henrici, '06, and John J. Falkenberg, '19; Program Committee, Clarence S. Timanus, '18, Harry A. Rapelye, '08, and James C. Irwin, Jr., '18; Publicity Committee, Page E. Golsan, '12, Henry F. Hoit, '97, Clarence M. Hardenbergh, '03, and Arthur S. Keene, '98; Entertainment Committee, Eltweed Pomeroy, Jr., '23, William L. McPherrin, '14, and James W. O'Brien, Jr., '18; Attendance Committee, R. J. Sholtz, '22, John H. Driggs, '21, Allston T. Cushing, '11, and Francis H. Littrell, '27.

This year's work is very important as we have a scholarship, granted from the scholarship funds of the Institute, to be administered in this district this year. We hope that we may have the active interest and cooperation of all members in this undertaking. — C. Ellsworth Brown, '20, *Secretary*, Interstate Building, Kansas City, Mo.

Rocky Mountain Technology Club

No less interesting than novel is the program of monthly meetings being held in Denver by the Rocky Mountain Technology Club. Coming the thirteenth of each month, except when changed a day or two to avoid a Saturday or Sunday, the meetings comprise a noon luncheon, during which the club business is transacted, followed by a talk by one of the club members sketching his own professional career. The fellowship engendered by these glimpses into the lives of the members is real and appreciable. Thus far no scandal has cropped out in the "confessions," but either the anticipation of it or some other equally powerful force is responsible for the good attendances.

Visiting Alumni are urged to attend these meetings when possible. They should telephone the Secretary, Keystone 1171, Extension 205, if in Denver on or near the thirteenth of the month, for particulars of that month's meeting. — DANA E. KEPNER, '21, *Secretary*, 420 State Office Building, Denver, Colo.

New Haven County Technology Club

The Annual Meeting of the New Haven County Technology Club was held on Saturday, October 20, at the Winchester Club House. The following men were elected as officers of the Club for the ensuing year: President, G. Vincent Macconi, '15; Vice-President, Gerald M. Keith, '12; Secretary, John A. Lunn, '17; Treasurer, Harold G. Manning, '12; Board of Governors, Roy L. Parsell, '14.

The Treasurer of the Club reported an unusually successful year from the financial standpoint, and the retiring Board of Governors reported that they had added \$125 out of surplus current income to the Scholarship Fund of the Club. After the close of the business meeting the members adjourned to the Roger Sherman Bowling Alleys and the informal team matches brought the evening's program to an enjoyable conclusion. — HUDSON B. HASTINGS, '07, *Secretary*, 6 Everit Street, New Haven, Conn.

The Technology Club of Rochester

The nineteenth annual meeting of The Technology Club of Rochester was held at the Red Jacket Inn near Rochester on the afternoon and evening of September 29, where thirty-two loyal sons of Technology gathered for the occasion. The first event on the program was a game of indoor baseball, played out of doors in the warm September sunshine between teams representing the even and odd numbered classes and which was finally won by the odds. Next there was

a football kicking contest in which the contestants stood at the home plate of the baseball diamond and kicked the ball into a quartering wind towards second base with the object of having the ball land as close as possible to the base. Ken Coachman, '22, won this contest. Elmer Oliver, '21, turned in the best target to win the rifle shooting match, and Hank Couch, '20, squeezed a first in the bowling contest. An interesting golf game was staged in which the players made short mashie shots toward a hat resting, brim up, on the grass. The object was to get the ball in the hat with the fewest strokes and Hazen Pratt, '22, proved himself the most skillful.

The events of the afternoon gave every one a good appetite for the Inn's delicious dinner which was served at six-thirty. Between courses Technology and old favorite songs were sung and prizes distributed to the winners of the afternoon contests by President Frederick L. Higgins, '04. After the dinner the annual business meeting was held in the living room under a blue haze of tobacco smoke and the following officers were elected for 1928-29: President, M. Herbert Eisenhart, '07; First Vice-President, John W. Scott, Jr., '21; Second Vice-President, Cyril J. Staud, '24; Treasurer, William M. Vicinus, '23; Secretary, Henry R. Couch, '20.

During the past year the Club has sought to arouse interest in the Institute by showing a moving picture film depicting life and scenes at Technology in the neighboring high schools, and also by sending some of the undergraduate publications to the city high schools. A four hundred dollar freshman scholarship was started last year and as a result of this an outstanding young man enrolled in the Institute this fall together with six other boys from the same high school whose interests were, no doubt, influenced toward Technology by the scholarship. This freshman scholarship is to be continued each year, and during the winter an entertainment will be given to raise the necessary funds for next year. — HENRY R. COUCH, '20, *Secretary*, 126 Albemarle Street, Rochester, N. Y.

Technology Club of Albany

The regular monthly meeting of the Technology Club of Albany was held Wednesday evening, October 24, with a dinner at the University Club. President Burt R. Rickards, '99, presided at the business meeting.

Upon motion duly made, seconded and carried, it was agreed that the Secretary be instructed to turn down with regrets the offer of the Combined Musical Clubs for a concert to be held in Albany on January 28, 1929. It was, however, under-

stood that the Albany Club would co-operate with the M. I. T. Club of Eastern New York at Schenectady should they decide to undertake the responsibility. The Schenectady Club, having about twice the number of members as Albany, seems the logical place for such a concert.

B. R. Rickards reported on the Scholarship Committee. This year Albany has two candidates, one of whom will no doubt receive the honor as heretofore Schenectady boys have had the award. A letter from H. W. Bibber, '20, President of the M. I. T. Club of Eastern New York, asking for funds for this year's scholarship at Technology, was read and a committee consisting of Harlen M. Chapman, '02, of Troy, William D. Schofield, '23, and Herbert W. Cummings, '10, was appointed to collect funds from the local members. Several copies of *VooDoo* were distributed by the Secretary and members were urged to subscribe to the undergraduate publication.

Upon motion duly made, seconded and carried, C. Hancock Wood, '91, was elected to the Scholarship Committee to take the place of B. R. Rickards, resigned. The other members of the committee are Dr. William D. Coolidge, '96, and Karl A. Pauly, '96, of the Schenectady Club.

The speaker of the evening was Warren S. Blauvelt, Esq., Vice-President of the Hudson Valley Coke and Products Company. His talk on the by-product coke industry and its relation to the public welfare was especially interesting as there has been so much local publicity regarding the plants in this vicinity during the past year. — E. RANDOLPH HAIGH, '22, *Secretary*, University Club, Albany, N. Y.

M. I. T. Alumni Association of Cleveland

The Technology Club of Cleveland began its regular fall festivities with a luncheon held on the first Friday of October at the Allerton Club Residence in Cleveland. For 1928-29 the Cleveland Club proposes to have a luncheon on the first Friday of each month at the above address, at which one of the members will give a short review of current affairs at M. I. T., and another member will give a ten minute talk on his own personal business. At the meeting in October, Ralph C. Geckler, '22, of Lott and Geckler, reviewed the current affairs.

On October 18, at the University Club, the first fall meeting was held, and at this meeting Harold H. Burton, of the firm of Cull, Burton and Laughlin, gave an address on the New Borough Plan being considered for Cleveland. Mr. Burton, although not an alumnus, is the son of former-Dean Burton and, needless to say, his subject was of great interest. The Club voted to assist the alumni athletic fund by an immediate response and

also to subscribe to three issues of *VooDoo*.

Among the newly married members at the meeting was A. I. Bradley, '22, the former Secretary of the Cleveland Club. Mr. Bradley put in five years as Secretary of the Club, and no one but the writer appreciates the time, thought, and effort that it was necessary for him to exert in order for the Club to function in the fine manner in which it did.

The next meeting will be held at the Allerton Club Residence on the first Friday in December, and we will certainly welcome any traveling Technology men who happen this way. — LAURENCE B. DAVIS, '22, *Secretary*, Cities Service Oil Company, 4614 Prospect Avenue, Cleveland, Ohio.

Technology Club of Cincinnati

There were always enough members on hand during the summer months to make our Tuesday luncheons at the Hotel Haylin worth attending. With the vacation season behind us our table is again assuming a compact formation with a good mixture of the young and the old. The architects and contractors as usual predominate. However, our membership is well diversified so that one can always count on meeting men of his own time and allied interests. The club scholarship fund is still in the hands of Stewart Miller, '07, who reports, however, that we have no man at the Institute this year to receive its benefit. The fund was created mainly to aid freshmen, to encourage worthy students to take up courses at Technology. Efforts are steadily being made to increase this fund, if possible, for wider application.

The winter season always sees an increase in our club activities, and a greater interest in the Tuesday luncheons. For an hour of good fellowship Technology men visiting Cincinnati are urged to join us on these occasions. — WILLIAM V. SCHMIEDEKE, '12, *Secretary*, The Penker Construction Company, 1030 Summer Street, Cincinnati, Ohio.

Technology Club of Japan

This year's annual meeting was held at Nippon Kogyo Club on June 8, 1928, with nineteen members present. Election of officers for the next term was held, and all were reelected as follows: President, Takuma Dan, '78; Vice-Presidents, W. W. Stevens, '98, and Iwazo Suzuki, '11; Secretaries, Yoshio Kubota, '23, and Masaru Kametani, '28; Treasurer, Utaro Tsukagoshi, '07; Board of Directors, Masanao Endo, Kenzo Goto, '11, and Keiji Ito, '16.

In expectation of the arrival of some Technology graduates to attend the International Industrial Meeting at Tokyo in the fall, the following members were

chosen by our President to form a committee for their entertainment: Masanao Endo, Kensuke Hashimoto, '19, Hoshio Kubota, '23, and Masaru Kametani, '25.

It was unanimously voted to celebrate Dr. Dan's Fiftieth Anniversary of his graduation from Technology by presenting him with a gift from those members of the Club who wish to participate. At this meeting Dr. Dan gave us a very interesting story of "My Boston Life Forty Years Ago." From now on we are to enjoy a talk at every meeting from some member of the Club. — YOSHIO KUBOTA, '23, *Secretary*, Kanshei Honbu Shibui, Navy Department, Tokyo, Japan.

Technology Club of Hawaii

The annual meeting of the Technology Club of Hawaii was held on Saturday evening, September 29, at the University Club. There was a dinner at 6:30, followed by the election of officers. The speaker of the evening was Dr. Thomas A. Jaggar who has just returned from a scientific expedition to the Aleutian Islands. This expedition was undertaken in the interests of volcanology for the National Geographic Society, and Dr. Jaggar gave some interesting side-lights on the expedition. — WILLIAM C. FURER, '06, *Secretary*, 1909 Adolph Street, Honolulu, T. H.

Technology Club of Rhode Island

The first meeting of the Technology Club of Rhode Island for this season was held on Wednesday evening, November 21, at the To Kalon Club in Pawtucket. A dinner was served at 6:30 o'clock, after which a bowling tournament was held which was greatly enjoyed by all. — JOHN C. NASH, '20, *Secretary*, 515 Morris Avenue, Providence, R. I.

Indiana Association of the M. I. T.

Back in the dim and dusty days of Ye Scribe's youth there was a popular poem entitled "Darius Green and his Flying Machine," the hero of which put his philosophy into these words: "If birds can fly, why can't I? Are the chickadee and phoebe any smarter than we be?" The Indiana Association furnished an answer to this query by holding an Aviation Night on Friday, October 5, at the University Club. The subject was "Aviation and Some of its Problems," and the speaker, Mr. Goldthwaite of the Allison Engineering Company, an expert on the subject of aviation and airplane engines. Mr. Goldthwaite recently gave a most interesting talk on this subject before the Sciencetech Club, a talk which was enthusiastically received. Aviation is a most timely matter for discussion in Indianapolis on account of the new airport now being planned here. — L. WILLIS BUGBEE, JR., '21, *Secretary*, 4170 Guilford Avenue, Indianapolis, Ind.



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CAMBRIDGE

GRAVEL AND GUMBO

(Continued from page 90)

vide, it is expected, for the completion of all through highways in five years.

After surmounting the main range of the Rockies one is not always on first-class highways, but at least he is out of the gumbo. From Belton west to the Idaho line, a distance of 180 miles, about 75 miles have been completed. The remainder, however, is passable in wet weather, due to the gravelly nature of the soil. Two dangerous canyon sections—Bad Rock Canyon west of Belton and a "switchback" portion west of Libby—will be improved by the State Highway Commission in 1929. Idaho is mountainous but not wide in the northern portion so that her east and west roads are fairly good.

Once over the Idaho-Washington boundary road conditions resemble those east of the Mississippi. The Columbia River Highway in Oregon is paved or oiled from Portland eastward nearly to Pendleton (250 miles) and for a hundred miles from Portland westward to Astoria. No more scenic route nor finer example of highway engineering can be imagined.

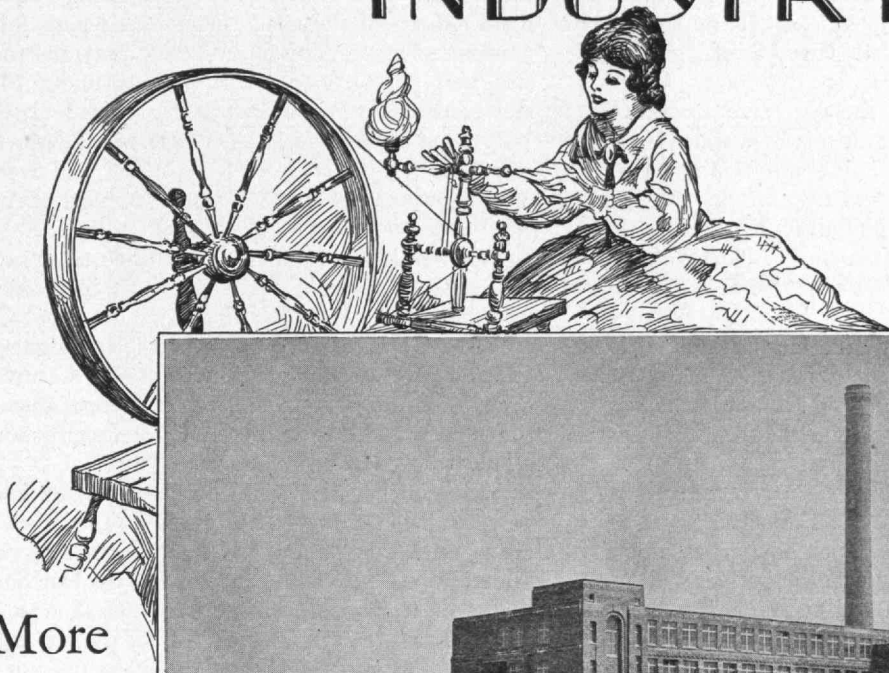
The Pacific Highway (U. S. 99), the main north and south route west of the Cascade and Sierra Nevada Mountains, is paved from Canada to Mexico, except for a stretch south of Dunsmuir, Calif. This brief interlude is at present under construction and ought to be ready in 1929. Two years ago I traversed the section of the Pacific Highway known as the Coast Route between Los Angeles and San Francisco and this year the portion from Seattle as far south as Chico and Oroville, which are north of Sacramento. In the State of Washington is the finest and widest paving of the Pacific Highway, but the portion in southern Oregon and northern California is most scenic. From Portland the road runs south through the valleys of the Willamette and Umpqua Rivers, crosses four divides in fifty miles and comes down into the Rogue River Canyon at Grants Pass, Ore. Thirty miles farther south at Medford it begins the climb over the Siskiyou Mountains and then enters California. Medford is the junction from which an excellent branch leads to Crater Lake National Park, the distance to the Lodge (which is over a mile greater elevation than Medford) being eighty-five miles.

Of the three most famed snow-capped peaks which lie near the Pacific Highway, Rainier, Hood and Shasta, Shasta shows to best advantage from the road. It is equally charming whether approaching from north or south and magnificent views of it are obtainable from the time one crosses the Siskiyou until the park-like country between Redding and Red Bluff gives way to the wide level plain of the Sacramento Valley.

In addition to the branch highway to Crater Lake from Medford there are many other supplemental roads to the Pacific Highway and more are being constructed. The Mt. Hood Loop, from Portland around the base of that mountain and the seventy-five mile run from Tacoma to Paradise Valley on the slope of Mt. Rainier are two examples of those now available and the California Redwood Highway is the most extensive project now under way.

(Continued on page 126)

INDUSTRY



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GRAVEL AND GUMBO

(Continued from page 124)

This leads north from San Francisco keeping west of the Coast Range through the gigantic trees of the Humboldt State Redwood Park to Crescent City, Calif., and then bends northeast, to join the Pacific Highway.

The common approach to the Canadian Rockies by motor from the Pacific Coast States is by a route leading from Spokane through Sand Point and Bonners Ferry, Idaho, to Kingsgate, Moyie, and Cranbrook, B. C. The road from the international boundary to Cranbrook is rather narrow in parts and often rough. North of Cranbrook for a hundred miles to Lake Windermere it is some better, and near the foot of that Lake one enters the Kootenay National Park at Radium Hot Springs. This is the western terminus of the Banff-Windermere Highway. Of all motor roads in the Canadian Rockies none is better advertised than this highway opened in 1923, and every mile of its ninety-two justifies its fame.

Right at the Park entrance begins the six-mile climb to Sinclair Pass summit (4,950 feet). From there the road descends into the valley of the Kootenay River which it crosses to climb again up the Vermillion River Valley to Vermillion Pass summit (5,660 feet). A mile or so west of this summit is the Interprovincial Boundary between British Columbia and Alberta, and for seven miles eastward the road drops to join the Bow River road. Banff is twenty miles down the Bow from this junction, and Lake Louise is twenty-two miles westward up the valley. A short side-drive of half an hour from Lake Louise leads

to Moraine Lake and the Valley of the Ten Peaks. The main road continues westward from Lake Louise, crosses the Continental Divide into British Columbia near Hector and leads down over the Kicking Horse Pass to Field. Much of the road through the pass follows the grade used by the Canadian Pacific previous to the construction of the two spiral tunnels under Mts. Field and Ogden. From Field side-drives lead up the Yoho Valley and to Emerald Lake. The main highway continues thirty-eight miles westward to Golden, and eventually it will be pushed over the Selkirks to connect at Arrowhead with a through road to Vancouver.

This whole region is so well-known as to need no exposition of its scenic qualities except to point out that motor roads have made them easier to view. Calgary is eighty-five miles east of Banff, and from Calgary south to Glacier Park station via MacLeod and Cardston is less than 250 miles. This route, which affords easy access to the Banff-Lake Louise section from eastern points, will all be graveled by next summer.

About thirty miles west of Cardston an excellent highway opened late in 1927 brings one to the Prince of Wales Hotel on Waterton Lake. Of the seven reservations set aside by the Dominion, Waterton Lakes National Park is the smallest, being but 220 square miles in area. Its southern side is the International Boundary; to the west it reaches to the Continental Divide; to the north to the Carbondale River; to the east to the rolling Alberta prairies. It does not contain the highest waterfall, the tallest peak, the deepest valley or the largest natural

(Continued on page 128)

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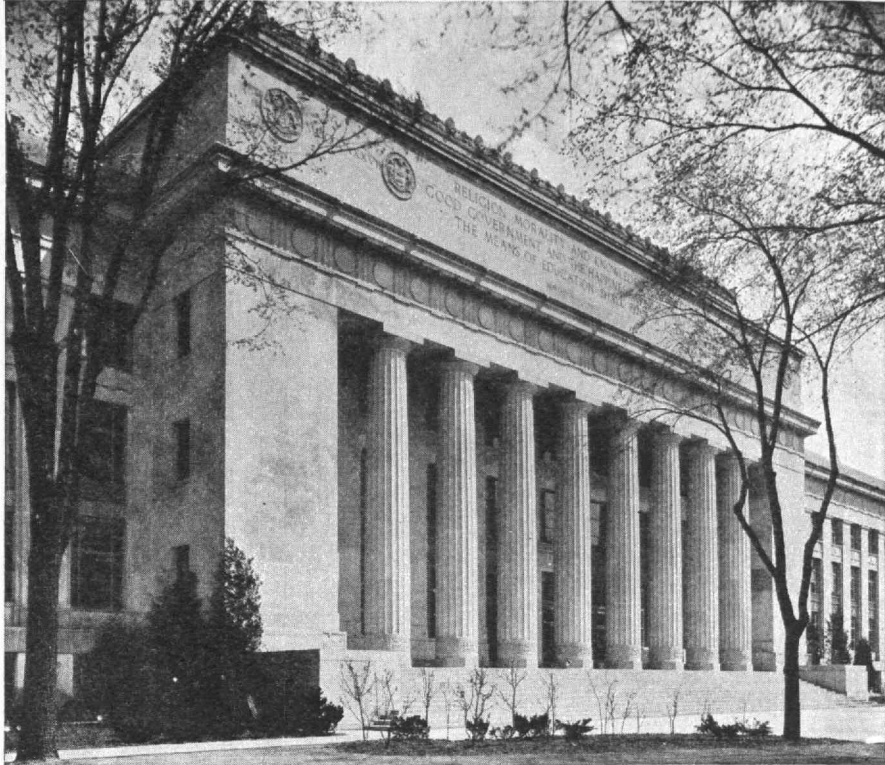
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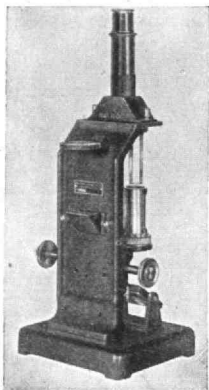
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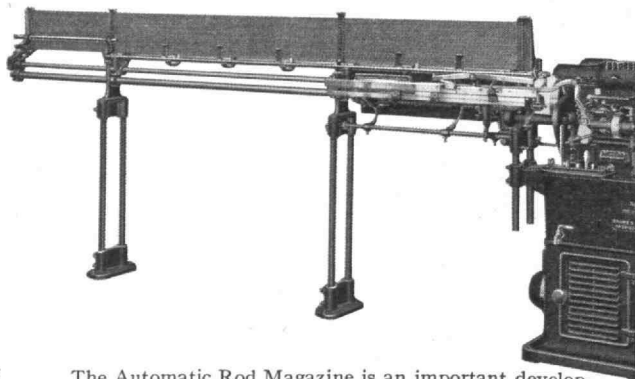
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GRAVEL AND GUMBO

(Continued from page 126)

feature of any sort. But like its southern neighbor, the United States Glacier National Park, the mountains in Waterton possess a warmth of rock colorings, of browns and buffs and dark reds as well as lava blacks, mingled with timbered slopes and studded with fascinating emerald-colored lakes and snow patches, which charm more than the coldness of the loftier peaks farther north. In Waterton they might aptly be termed the "friendly mountains" for so they seem upon approach from the plains along the motor road.

John George Brown, born in England and trained at Oxford, by profession successively an army officer in India, gold-seeker in California, and cowboy and prospector elsewhere, first came upon the Waterton Lakes in 1865. To them he shortly returned to become the first white settler in the region and there spend the remainder of his life. He later became the first warden and Acting Superintendent of the Park. Brown, however, was preceded seven years by Lt. T. Blakiston, R.A., in command of an offshoot party of the famous Palliser Expedition which sought a railroad route over the Rockies. Blakiston is believed to have named these lakes in honor of Charles Waterton, a famous English traveler and naturalist, who devoted much of his life to ornithological researches and to a study of the sources of Indian poisons.

Although known for a half century and used as a holiday paradise for residents of Cardston, Pincher Creek, Lethbridge, and other towns of southern Alberta, it is only since last year with the building of motor roads and the Prince of Wales Hotel that accommodations have been provided to attract distant travelers. Unlike the other Parks, this one is not directly approachable by rail. Cardston or Pincher Creek, Alberta, are the nearest stations on the Crows Nest Pass line of the Canadian Pacific but for the average traveler these are off the beaten track, and it is more practicable and comfortable to use the bus service operated from Glacier Park station on the main line of the Great Northern, unless one goes in by trail over the mountains from Glacier Park.

Bus lines reach many of these mountainous sections in the American as well as the Canadian National Parks, and the reader may wonder whether it would not be more satisfactory to cover as many as possible that way instead of driving his own car. This alternative method would necessarily restrict his comings and goings but would not subject him to the strain of driving over steep and often narrow roads. It is my conclusion, however, that there is less actual danger or strain in mountain driving after a day or two of practise than there is in driving in the traffic of any large city. People are more courteous, they keep more on their own side of the road and they pay more attention to the mechanical condition of their cars than is usually the case in the East or Middle West. Even the most careless persons will take precautions if they realize that their lives often depend on their brakes and that service stations are not plentiful. Except in the Canadian Parks, however, service stations for the more popular makes of cars seem to be frequent.

(Concluded on page 130)

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GRAVEL AND GUMBO

(Continued from page 128)

For transcontinental driving, aside from having a car in good mechanical condition (and decent tires unless the driver be one who wishes to martyr himself by changing at inconvenient intervals) three pieces of extra equipment will prove invaluable. These are: colored sun goggles, side awnings, and a water bag. The second may not add to the appearance of a car but where the direction is toward one point of the compass all day and the roads are straight for miles at a stretch, awnings afford welcome protection. Two spare tires and running board containers carrying spare gasoline and oil are conducive to one's peace of mind. Chains and a tow-rope also might come in handy, although we needed neither. The number and kind of spare motor parts to be carried are, of course, dependent upon the age and kind of car. In the whole 10,000 miles the only car we saw in trouble (except wrecks) was that of a man from Keene, N. H. He was trying to rivet his trouser belt together as a substitute for a worn-out engine fan belt, in order to get over a rise and roll down to a service station in Banff.

As to luggage, take as little as possible and leave half of that home. The hotels operate on the "come-as-you-are" policy and their patrons live up to it. There is no need to accumulate a number of road maps in advance. A general route can be planned by using the Official Road Map of the United States issued by the American Automobile Association, and detailed up-to-date State maps can be acquired for each new State entered at any of the gasoline stations of the larger oil companies. The Mohawk-Hobbs Grade and Surface Guides published by the Mohawk Rubber Company cover many of the main transcontinental routes. They contain a wealth of helpful information and show profiles of the roads, thus giving warning of heavy grades. A good hotel directory such as that sold by the Gehring Publishing Company is almost a necessity. The cost of operating a car can be budgeted by the table on page 87 and an allowance of \$5.00 per person per day will cover food and lodging. As the table shows, the author averaged 14.4 miles to the gallon and the operating cost was 2.92 cents per mile.

To sum up the brief for motoring in the Rockies, it is favorable and conditions are getting better year by year. Five years hence a coast-to-coast motor journey ought to seem like boulevarding. Even by 1929 certain irritations will have been eliminated for Massachusetts drivers will not have to answer for the codfish minnows on their license plates or attempt sage predictions as to whether Al Smith can carry his own state. But the ever recurring observation that "you're a long way from home" is likely to persist forever.

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PHYSICS AND MEDICINE

(Continued from page 92)

to each aspect, theoretical and practical. It is possible that nothing would happen. But generally when you make a redistribution you settle down ultimately to a different state of dissipated energy, and I have a feeling that if the scientific and practical aspects of the subjects of instruction in our professional schools generally could go more chronologically hand in hand—not hand in hand with respect to personnel necessarily—if each year could have its share of theory and its share of practice, we should find theory and practice drawing together in the instruction to the benefit of each, so far as the student was concerned.

There are people, of course, of a logical type of mind, or at least of a logical type of terminology when they talk, who say that it can't be done, that you must have all this scientific theory in order to get to the applications. But the courses of instruction in the way that they are actually taught will not always bear that out, though in some rare instances they will. When you examine the courses you will find in the third and fourth years that there are bodies of purely empirical information given to the student, information that has today to be given to him in a largely empirical way and cannot be tied in to our general body of science, and which in my opinion could just as well be taught earlier and got out of the way. On the other hand, there are parts of theory, whether of physics or of physiology, that are so abstract and yet so important that a good deal of effort should be spent in trying to get the student really to grasp those fundamental principles.

The students themselves will do a great deal of the mixing of theory and practice if they have them at the same time. They may even ask questions that will be embarrassing to their respective teachers. They might ask a teacher of engineering a question about physics that they were having at the same time that would bother him. They won't do it if they have had their physics in the first and second years and are "through with it," as is the American idea. They might embarrass the theoretical man by asking practical questions as to what he is teaching. Probably a course in physics that is given to pre-medical students should be very different from the course in physics given to engineers. For the medical man, for anybody who is going to work with living matter, whether he is a medical man or a plant physiologist, plant pathologist, immunologist, the forces which we ordinarily mostly ignore in our engineering courses in physics are the most important. They are mostly ignored in every type of course in physics, subjects like adhesion and cohesion, surface tension; these are the forces that are of importance in the minute

(Concluded on page 134)

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PHYSICS AND MEDICINE

(Continued from page 132)

physicochemical systems, like the cells, which are basic in the study of living material.

D'Arcy Thompson in his book on "Growth and Form" written about the totally different aspects, from a physical point of view, of the world in which the cells live and the world in which we large creatures live. Now it would seem to me that for a person interested presumably in the medical sciences, in plant physiology or plant pathology, some dwelling on that part of physics which is included in D'Arcy Thompson's book would be vastly preferable to dwelling upon certain parts which would be of much greater importance than that to the engineer. I do not see how one can dwell enough on the whole subject in the time allotted to us so that the student can understand it all, and I am rather well convinced by experience that he does not understand it all and often comes precious near not understanding any of it.

I believe Columbia University is more generous in its engineering school in the time which it gives the teacher of physics than any other place of which I have ever heard. At all events, shortly after President MacLaurin had told me that the Corporation had appointed me Head of the Department of Physics at Technology, I heard from Wendell. He said, "You have an impossible task. You have to teach physics in a length of time in which it cannot be taught." It was an impossible task and always will remain an impossible task to teach all or even half of what the staff knows about physics in the time that the Faculty will give the staff in the Department of Physics to teach it.

I don't know what the answer is to the very difficult problem of teaching physics. But I think that there is a great deal in common between teaching physics in an engineering school and teaching physiology in a medical school, and I think that there is much which is very largely common to all theoretical instruction in professional schools as precursor to practical work. Those relationships of an instructional sort are just as important to study as relationships of a scientific sort; and very important, also, are matters of personal relationships and personal contact between teachers and investigators in the different sciences like medicine and physics. A department of chemistry, perhaps called biochemistry, perhaps called by some other simple name, is now found in practically all medical schools, and I expect that time will come rather shortly when professorships of biophysics or of some similar title, filled by persons who at least know their physics very thoroughly, even if they are not real physicists, will be found in most of our medical schools. The resulting opportunities for personal contact and conference between physicist and medical scientist would be of great value to the latter and I believe of no inconsiderable value to the former. But it would be difficult to equip the medical schools today with those departments even if the money were available, because you could not find the physicists.

And why are there so few physicists? Is it possibly because as teachers of physics we have not known how to attract the following which teachers of mathematics and teachers of chemistry attract?

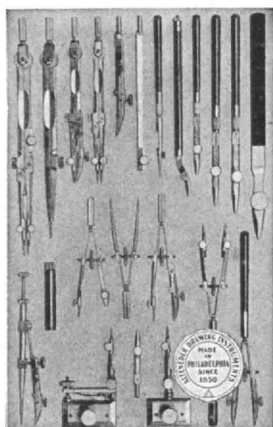
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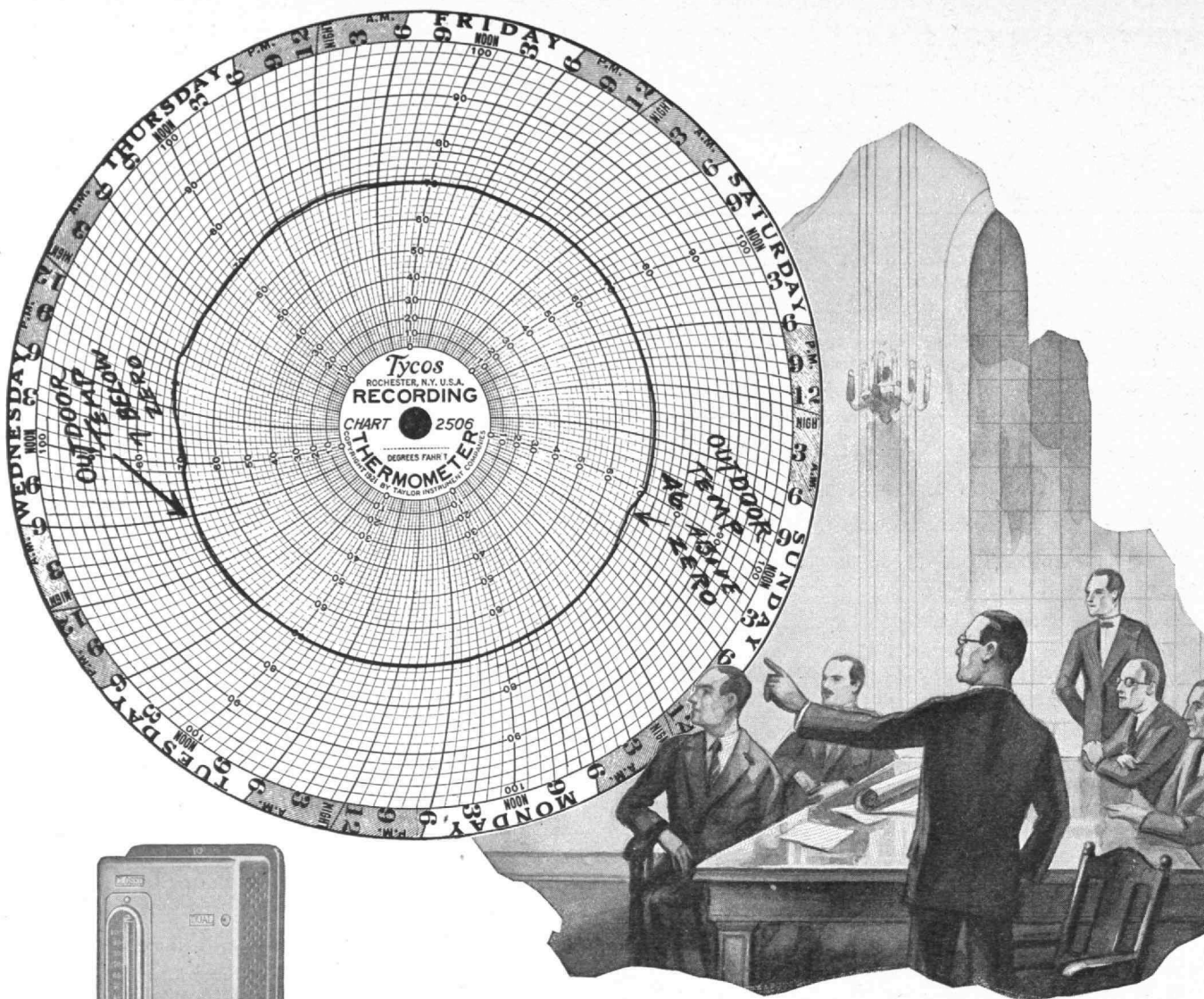
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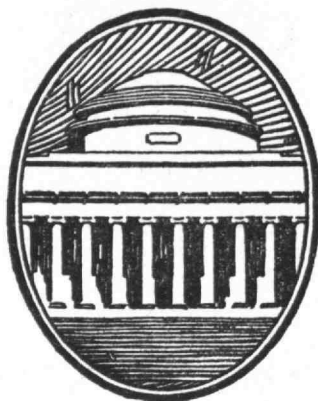
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